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Anodonta undulata and *A. lacustris*, Lea, showed no signs of sensitiveness. *Unio inflatus* exhibited but little motion, while numerous specimens of *U. radiatus* invariably gave more or less sign when the interruption of light took place. Some individuals were more sensitive than others, and the females exhibited this power much more than the males, often withdrawing, not only their siphons, but their mantle within the valves.

It is difficult to say with certainty how far their visual organs are developed, as well also as to number and exact position. The fringes of the branchial and and anal siphons are, in the *Uniones*, formed of small, subconical tentacula. These are larger in the branchial siphon of *Unio*, while they do not exist at all in the anal opening of *Anodontæ*. With a good lens the terminal point of the tentacula may be observed to be rounded and furnished with at least the appearance of an eye, and that it will prove to be a true eye, however imperfect, there can be but little doubt. Mr. Lea did not intend to pursue the minute anatomy of this organ; he left it to Dr. Leidy, who had done so much in the histology of the terrestrial Gasteropods, believing that he would be able to make out the complete anatomy of the eye in the *Unio*.

February 17*th*.

Vice-President Lea in the Chair.

Communications for publication in the Proceedings were read, entitled :—

1. Notice of a collection of Reptiles made by Dr. Henry A. Ford in the Gaboon country, West Africa, by Edward Hallowell, M. D.
2. Description of thirteen new species of Uniones from Georgia, by Isaac Lea.

Which were referred as usual to Committees.

Dr. Leidy made the following observations on entozoa found in the Naïades.

He had observed a curious parasite allied to *Aspidogaster conchicola*, infesting *Anodonta fluviatilis* and *Anodonta lacustris*, within the cleft of the upper branchial cavity, adhering to the outer surface of the renal organ and the contiguous margin of the foot. The new parasite, for which the name of *Cotylaspis insignis* was proposed, is from ½ a line to 1 line long, curved funnel shaped, with the base forming an oval ventral disk provided with an outer circle and an inner row of acetabula 29 in number. The animal is provided with distinct eyes, while *Aspidogaster*, in accordance with its being imprisoned in the pericardium of the Naïades, is blind.

February 24*th*.

Vice-President Bridges in the Chair.

The following communications, on report of the Committees to which they had been referred, were ordered to be published in the Proceedings.

Descriptions of American L and Shells.

BY W. G. BINNEY.

Helix intercisa. Testa solidissima, luteo-cinerea, apice rufâ, globoso-conica; spira brevis, sutura impressa; anfr. quinque convexiusculi, lineis parallelis, volventibus, valdè demissis, strias incrementales distinctas intercidentibus; anfractus

ultimus globosus, supra perpheriam fasciâ unicâ, rufâ, obscurissimâ ornatus; apertura maximè obliqua, formâ equicalcei, rotundata; labrum albo-cinereum, incrassatum, subtus reflexiusculum, subunidentatum, umbilicum occultans; marginibus approximatis, callo interjunctis. Diam. maj. 22; min. 19; alt. 15 mill.

Habitat in provinciâ Oregon.

Figurata est sub nomine *H. Nickliniana*, Lea, *var.* tabula vi. patris mihi Amos Binney, Doctoris, (Terrestrial Mollusks, iii. t. vi. fig. 1, icon in medio posita, vol. ii. p. 120). Sed differt ab hac specie et ab *H. Californiense*, Lea, formâ testâ solidiori, aperturâ, et sculpturæ indentatæ et granulatæ absentiâ. Ab aliis Californiæ et Oregon speciebus hodie cognitis, lineis profundis volventibus facile noscitur.

Succinea lineata. Testâ oblongo-ovatâ solidiori, albidâ, vel cinereâ; spirâ elevatâ, acutâ suturâ impressâ, anfr. ternis convexis, lineis crassis parallelis inter rugas incrementales volventibus ornatâ; aperturâ oviformis, partem testæ dimidiam æquante; columellâ plicatâ, pariete callo albo indutâ. Diam. 6, alt. 12 mill.

In provinciâ Nebraska, ad flumen 'Yellowstone' prope Fort Union specimina plurima collegit Dr. F. V. Hayden.

Similis *S. vermetæ*, Say, sed formâ magis ovali, aperturâ anfractibus convexis et spira breviori differt. Cognoscitur inter Succineas Americanas testâ solidiori, aperturâ oviformi, et specialiter lineis volventibus in anfr. ultimo positis.

Prodromus descriptionis animalium evertebratorum quæ in Expeditione ad Oceanum, Pacificum Septentrionalem a Republica Federata missa, Johanne Rodgers Duce, observavit et descripsit

W. STIMPSON.*

Pars. I. *TURBELLARIA DENDROCŒLA.*

Conspectus generum et familiarum.

Species nonnullas dubias vel non plene descriptas quarum exemplis non occurri, non tentatum est hîc generatim distribuere. Index omnium tamen in cl. Diesingii Systemate Helminthum inveniatur, cui refertur lector.

Monocelis auctoritate Schultzii, (Beiträge zur Nat. der Turbellarien,) locum suum habet in *Rhabdocœlorum* tribu. *Telostoma* Oerst., *Distigma* Hemp. et Ehrenb., et *Tetracelis* Hemp. et Ehrenb., mihi videtur eidem tribui pertinent. *Niobe* genus Girardii, (Bost. Proc. Nat. Hist., iv. 210.) Gasteropodum est generis *Limapontiæ*. *Planaria bilobata* Leuck., *Centrostomum incisum* Diesing, et *Diplanaria notabilis* Darwin, forsitan Planariæ in re sese bipartiendi sunt.

Cum Diesingio nomen *Dendrocœla* totæ tribui applico. Divisiones ejusdem vero *Ceridea* et *Aceridea*, formas affines, e. g., *Stylochus* et *Leptoplana* separant; et genera admodum diversa, e. g., *Eurylepta* et *Planaria*, approximant. Sic ea secundum aperturarum genitalium numerum divisi.†

Subtribus I. *DIGONOPORA.* Aperturæ genitales duæ.

EURYLEPTIDÆ.

Corpus planum, dilatatum, læve v. papillosum. Caput plicis tentacularibus (pseudotentaculis, *Quatref.*) duabus frontalibus. Os ante medium situm. Ocelli numerosi prope extremitatem anteriorem siti. Maricolæ.

Thysanozoon, *Grube.* (Actin. Echinod. u. Würmer d. Mittelmeeres, 54. 1840)—

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* Communicated by the Smithsonian Institution.

† Dr. Carolus Girard figurarum ineditarum suorum generum et specierum novarum mihi benigne usum dedit, quibus eorom characteres et affinitates designare possum.

Corpus supra papillis ubique obsessum. Caput discretum, tentaculis mediocribus. Ocelli frontales aut cervicales. Os subcentrale. Apertura genitalis mascula subcentralis, fœmina retrorsum sita.

T. Diesingii, Grube, l. c., 54; Archiv für Naturgeschichte, xxi. 2, 143.

T. Brocchi, Oerst. *Eolidiceros Brocchii*, Quat.; Voy. en Sicile, ii. 40, pl. 5, f. 1. (vix *Th. B.*, Grube, Arch. f. Naturg. xxi. 2, t. 6, f. 4, 5.)

T. Dicquemaris, Oerst.; Entwurf einer Syst. Einth. etc. der Plattwürmer, 47.

T. Fockei, Diesing, Syst. Helminthum, i. 213.

T. nigrum, Girard, Proc. Bost. Soc. Nat. Hist. iv. 137.

T. australe, infra.

PLANEOLIS, n. g. Corpus papillis sparsis, seriebus duabus lateralibus dispositis. Caput grande, discretum, tentaculis magnis. Ocelli capitales et tentaculares. Os subcentrale.

P. Panormus. *Eolidiceros Panormus* Quatref., Voy. en Sicile, ii. 42, pl. 3, fig. 2.

PROCEROS, Quatref. (Voy. en Sicile, ii. 37. 1845.) Corpus læve. Caput subdiscretum, tentaculis subdistantibus. Ocelli cervicales v. tentaculares. Os subterminale. Aperturæ genitales retrorsum sitæ.

P. argus, Quatref.; l. c. ii. 37, pl. 3, f. 5.

P. sanguinolentus, Quatref.; l. c. ii. 38, pl. 4, f. 4.

P. albicornis, infra.

EURYLEPTA, Hemp. et Ehrenb. (Symb. phys., Phytoz. Turb., N. 11. 1830.) Corpus læve, tenue. Caput vix subdiscretum. Plicæ tentaculares marginales approximatæ. Ocelli in acervum minutum cervicalem. Os ab apice circiter quartam corporis partem remotum. Apertura genitalis mascula ante, fœminea pone os sita (an semper ?).

E. prætexta, Hemp. et Ehrenb., l. c., N. 11, 1.

E. flavomarginata, Hemp. et Ehrenb., l. c., N. 11, 2.

E. cornuta, Hemp. et Ehrenb., l. c., N. 11. *Planaria cornuta*, Müll.

E. zebra, Diesing, Syst. Helminthum, i. 211. *Planaria zebra*, Leuckart, in Ruppell's Atlas, T. iii. f. 1, *a*, *b*.

E. limbata, Diesing, l. c. i. 210. *Planaria limbata*, Leuckart, l. c., T. iii. fig. 4.

E. velutina, Diesing, l. c., i. 210. *Proceros velutinus*, Blanchard, Voy. en Sicile, iii. pl. viii. fig. 2, *a*, *b*.

E. fulminata, niger, interrupta, guttato-marginata, Japonica, et coccinea, infra.

NAUTILOPLANIDÆ.

Corpus planum, hyalinum. Caput parvum, discretum, auriculis duabus. Ocelli nulli. Os post-mediale, œsophago protractili multilobo. Aperturæ genitales antrorsum sitæ. Pelagicæ.

NAUTILOPLANA, genus (novum) unicum.

N. oceanica. *Planaria oceanica*, Darwin, An. et Mag. Nat. Hist., 1st ser. xiv. 246. *Eurylepta oceanica* Diesing, l. c., i. 211.

CEPHALOLEPTIDÆ.

Corpus planum dilatatum. Caput discretum, extremitate acetabuliformi. Ocelli duo. Os subcentrale, œsophago valde protractili. Aperturæ genitales ante os sitæ. Aquarum subsalinarum incolæ.

CEPHALOLEPTA, Diesing, (Syst. Helminthum, i. 189, 1850) genus unicum.

C. macrostoma, Diesing, l. c., i. 189. *Planaria macrostoma*, Darwin, l. c., xiv. 247, pl. v. fig. 2.

TYPHLOLEPTIDÆ.

Corpus planum v. depressum, capite continuo, tentaculis nullis. Ocelli nulli. Os subcentrale ante v. post medium situm. Aperturæ genitales retrorsum sitæ (an semper?). Maricolæ.

Typhlolepta, Oerst., (Entwurf einer Syst. Einth. etc. der Plattwürmer, 50. 1844.) Corpus plano-depressum, oblongum, dilatatum. Os pone medium situm. "Penis absque stylo calcareo."

T. cæca, Oerst., l. c., 50.
T.? rubrocincta. *Orthostomum rubrocinctum*, Grube; Actin. Echinod. u. Würmer d. Mittelmeeres, 56. Arch. für Naturg. xxi. T. 6, f. 6.
T. extensa, LeConte; Proc. Acad. Nat. Sci. Philad., v. 319.

Cryptocœlum, n. g. Corpus planum, crassiusculum, latum, utrinque rotundatum. Os ante medium situm. Parasiticæ.

C. opacum, infra.

Typhlocolax, n. g. Corpus oblongum, depressum, utrinque attenuatum. Os post medium situm. Parasiticæ.

T. acutus. *Typlolepta acuta*, Girard, in Stimpson's Marine Invert. of Grand Manan, 27.
T.? marinus. *Typhloplana marina*, Oerst., l. c., 27, f. 31.
T. acuminatus, infra.

LEPTOPLANIDÆ.

Corpus planum, dilatatum, læve, sæpius tenerrimum. Caput continuum, tentaculis nullis. Ocelli plus minusve numerosi, occipitales v. occipitales et marginales. Os ante medium situm. Aperturæ genitales pone os, sæpius pone medium situm. Maricolæ.

Centrostomum, Diesing. (Syst. Helm. i. 199. 1850.) Ocelli in acervos duos parallelos dispositi. Os centrale, œsophago protractili multilobo. Aperturæ genitales retrorsum sitæ.

C. lichenoides, Diesing, l. c., i. 199, *Planaria lichenoides*, Mertens.

Elasmodes, LeConte. (Proc. Acad. Nat. Sci. Philad., v. 319, 1851.) Corpus oblongum, tenerrimum. Ocelli occipitales in acervos duos sæpius lineares et parallelos dispositi. Os ante medium situm. Apertura genitalis mascula centralis, fœminea retrorsum sita.

E. flexilis. *Planaria flexilis*, Dalyell. Gosse, Brit. Mar. Zool., i. f. 126.
E. pallidus. *Polycelis pallida*, Quatref. Voy. en Sicile, ii. 33, pl. iii. f. 8.
E. modestus. *Polycelis modesta*, Quatref. l. c. ii. 33; pl. iii. f. 11.
E. tigrinus. *Polycelis tigrina*, Blanch., Voy. en Sicile, iii. f. 74.
E. (?) gracilis. *Prosthiostomum gracile*, Girard, Proc. Bost. Soc. Nat. Hist., iii. 251.
E. discus, LeConte, l. c., v. 319.
E. acutus et tenellus, infra.

Leptoplana, Hemp. et Ehrenb. (Symb. Phys. Phyt. Turb., N. 12. 1830.) Corpus planum, dilatatum, tenerrimum. Ocelli omnes occipitales, formarum duarum; *primarii* majores, angulares, nigri, conferti, in acervos duos sæpius in umbonibus aggregati; *secundarii* minuti in acervos nebuliformes dispositi. Os subcentrale, ante medium. Aperturæ genitales retrorsum sitæ.

L. hyalina, Hemp. et Ehrenb., l. c. N. 12, 1, T. v. f. 6.
L. tremellaris, Oerst. *vix* Gosse in Brit. Mar. Zool. 1, f. 125.
L. atomata, Oerst. l. c., 49.
L. fallax, Diesing. *Polycelis falax*, Quatref. Voy. en Sicile, ii. 35, pl. 3, f. 10.
L. lævigata, Diesing. *Polycelis lævigata*, Quatref., l. c., ii. 34, pl. 4, f. 2.
L. ellipsoides, Girard, in Stimpson's Mar. Invert. of Grand Manan, 27, fig. 16.

L. humilis, oblonga, delicatula, maculosa, patellarum, punctata, Schönbornii, trullæformis, et fusca, infra.

Dioncus, Stimpson. (Proc. Acad. Nat. Sci. Philad., vii. 389, 1855.) Corpus planum, dilatatum. Ocelli in umbones duos subdistantes, occipitales, dispositi. Ocelli marginales nulli. Os subcentrale.
D. badius, St., l. c. vii. 389.
D. oblongus, St., l. c. vii. 389.

Pachyplana, n. g. Corpus latum, crassiusculum. Ocelli primarii in umbones duos parvos occipitales aggregati; secundarii in margine anteriore dispositi. Os subcentrale.
P. lactea, infra.

Prosthiostomum, Quatref. (Voy. en Sicile, ii. 35. 1845.) Corpus oblongum. Ocelli numerosi, quidam in acervum unicum sæpe bipartitum occipitalem, reliqui anteriores, marginales aut submarginales, arcuatim dispositi. Aperturæ genitales subcentrales.
P. arctum, Quatref., l. c., ii. 36.
P. elongatum, Quatref., l. c., ii. 36, pl. 3; f. 12.
P. affine, tenebrosum, constipatum, cribrarium, crassiusculum, sparsum, grande, collare, et obscurum, infra.

Diplonchus, n. g. Corpus oblongum, crassiusculum et maculatum ut in *Stylochis*. Caput papilla occipitali, bilobata ocellifera instructa. Ocell numerosi, minuti, ad papillam, etiam sæpe ad ejus basim dispositi. Ocelli marginales nulli.
D. marmoratus, infra.

STYLOCHIDÆ.

Corpus planum sæpius crassiusculum. Tentacula duo parva, brevia, occipitalia. Ocelli numerosi ad tentacula, vel in acervos capitales aggregati. Os subcentrale. Aperturæ genitales approximatæ, retrorsum sitæ. Maricolæ.

Stylochus, Hemp. et Ehrenb. (Symbolæ Physicæ, Phytoz. Turb. N. 8. 1830.) Corpus læve. Tentacula subdistantia. Ocelli numerosi, minuti, conferti in tentaculorum superficie; marginales nulli.
S. Suesensis, Hemp. et Ehrenb., l. c. N. 8, t. v. f. 3.
S. corniculatus et obscurus, infra.

Stylochoplana, n. g. Corpus læve. Tentacula subapproximata. Ocelli ad basim tentaculorum v. in acervos vicinos aggregati; marginales nulli.
S. folium. *Stylochus folium*, Grube, l. c., 51, f. 12.
S. maculata. *Stylochus maculatus*, Quatrefages, Voy. en Sicile, ii. 44, pl. 4, fig. 3.
S. reticulata et tenuis, infra.

Callioplana, n. g. Corpus tenue, læve. Tentacula elongato-conica, gracilia, approximata in areola alba. Ocelli ad tentacula et in areola inter tentacula; marginales nulli.
C. marginata, infra.

Trachyplana, n. g. Corpus crassiusculum, supra tuberculatum. Tentacula parva, inconspicua, hyalina. Ocelli ad tentacula; marginales nulli.
T. tuberculosa, infra.

Stylochopsis, n. g. Corpus subcrassum, molle. Tentacula distantia, obtusa. Ocelli magni ad tentacula, et minuti ad marginem anteriorem; interdum quoque in acervum occipitalem.
S. limosus, et conglomeratus, infra.

Imogine, Girard. (Proc. Acad. Nat. Sci. Philad., vi. 367. 1853.) Corpus læve. Tentacula brevia. Ocelli duo magni, ad apicem tentaculorum; et numerosi, minuti in corporis margine.
I. oculifera, Girard, l. c.

PLANOCERIDÆ.

Corpus planum, latum, læve. Tentacula duo elongata, subfiliformia, retractilia. Ocelli nulli. Os subcentrale. Aperturæ genitales retrorsum sitæ. Maricolæ.

PLANOCERA, Blainv. (Dict. d. Sci. Nat., lvii. 579), genus unicum.

P. Gaimardii, Blainv., l. c.

P. elliptica, Girard, Proc. Bost Soc. Nat. Hist., iii. 251.

Subtribus II. *MONOGONOPORA.* Apertura genitalis unica.

PLANARIADÆ.

Corpus oblongum depressum v. subplanum, antice auriculatum v. subauriculatum, capite raro tentaculato. Ocelli duo globulis vitreis instructi; rarissime plures vel nulli. Os post medium situm, interdum centrale. Stomachus amplus, post medialis. Apertura genitalis pone os. Aquarum dulcium v. marinarum incolæ.

PROCOTYLA Leidy, m. s. Corpus elongatum, antice vix auriculatum. Caput absque tentaculis. Frons disco evertibili acetabuliformi prædita. Ocelli duo distantes. Tubus cibarius varius parum divisis. Fluviatiles.

P. fluviatilis, Leidy, m. s. *Dendrocœlum superbum*, Leidy, Proc. Acad. Nat. Sci. Philada., v. 288, (non Girard.)

GALEOCEPHALA, n. g. Corpus oblongum, antice subauriculatum. Caput bitentaculatum; tentaculis ab auriculis distinctis. Ocelli duo subdistantes. Os postmediale. Tubus cibarius ramis arbusculiformibus. Fluviatiles.

G. superba. *Dendrocœlum superbum*, Girard, Proc. Bost. Soc. Nat. Hist., iii. 265. Nordam. Monatsb., ii. 2.

G (?) tentaculata. *Fasciola tentaculata*, Müll., Hist. Vermium, i. 2, 63.

DENDROCŒLUM, Oerst., (Entwurf einer Syst. d. Plattwürmer, 51. 1844.) Corpus antice auriculatum, auriculis tentaculiformibus. Caput antice excavata v. bilabiata, absque tentaculis. Ocelli duo. Os subcentrale, œsophago protractili cylindrico. Tubus cibarius ramis arbusculiformibus. Fluviatiles.

D. lacteum, Oerst., l. c. *Planaria lactea*, Auct.

D. fuscum. *Fasciola fusca*, Pallas.

D. vitta. *Planaria vitta*, Dugés, An. des Sci. Nat., 1st ser., xxi. 82.

PLANARIA, Müll. (*Dugesia*, Girard, Proc. Bost. Soc. Nat. Hist., iii. 265, 1850. Corpus depressum, oblongum, capite sessius subdiscreto, triangulari, nec labiis nec acetabulo prædito. Ocelli duo subapproximati. Os subcentrale, œsophago protractili cylindrico. Fluviatiles.

P. torva, Müll., etc.

P. gonocephala, Dugés, Ann. des Sci. Nat. 1st ser. xxi. 83, pl. ii. f. 22.

P. fusca, Dugès (non Gmel.) l. c. xv. 143, pl. 4, f. ii.

P. maculata, Leidy, Proc. Acad. Nat. Sci. Philad. iii. 251 et v. 289. *Dugesia maculata*, Girard, Nordam. Monatsb. ii. 3.

P. gonocephaloides. *Dugesia gonocephaloides*, Girard, Proc. Bost. Soc. Nat. Hist. iii. 265. Nordam. Monatsb. ii. 2.

P. Foremanii. *Dugesia Foremanii*, Girard, Proc. Bost. Soc. Nat. Hist. iv. 211.

P. truncata, Leidy, l. c. v. 225.

P. Sinensis, badia, et cinerea infra.

PHAGOCATA, Leidy. (Proc. Acad. Nat. Sci. Philad. iii. 248. 1847.) Corpus antice subauriculatum, tentaculis nullis. Ocelli duo. Os post medium situm, œsophago protractili multipartito. Fluviatiles.

P. gracilis, Leidy, l. c. Girard, Nordam. Monatsb. ii. 1. *Planaria gracilis*, Hald. Suppl. to No. 1, Monogr. of Limniades.

PROCERODES, Girard. (Proc. Bost. Soc. Nat. Hist. iii. 251, 1850.) Corpus depressum, antice truncatum, tentaculis auricularibus duobus. Ocelli duo distantes. "Tubi cibarii rami indivisi." Maricolæ.

P. ulvæ. *Planaria ulvæ*, Oerst. l. c. 53, T. 1, f. 5.

P. Wheatlandii, Girard. Proc. Bost. Soc. Nat. Hist. iii. 251. Nordam. Monatsb. ii. 4.

P. frequens. *Planaria frequens*, Leidy. Jour. Acad. Nat. Sci. Philad. 2nd ser. vol. iii. part 2, 143.

Fovia, Girard. (Proc. Bost. Soc. Nat. Hist. iv. 211, 1852.) Corpus depressum antice subtruncatum; fronte sæpius in medio producta v. acuta. Ocelli duo subapproximati. Tubus cibarius ramis indivisis. Maricolæ.

F. littoralis. *Planaria littoralis*, Oerst. l. c. pl. i. f. 6.

F. affinis. *Planaria affinis*, Oerst. l. c. 54.

F. Warrenii, Girard, Proc. Bost. Soc. Nat. Hist. iv. 211. *Vortex Warrenii*, Girard, l. c. iii. 264. Nordam. Monatsb. ii. 4.

F. graciliceps et trilobata, infra.

Bdelloura, Leidy. (Proc. Acad. Nat. Sci. Philad. v. 242, 1851.) Corpus depressum, antice acutum v. subacutum, cauda subdiscreta dilatata. Ocelli duo. Os centrale, œsophago cylindrico. Stomachus latus. Cæca indivisa. Apertura genitalis ——— ? Maricolæ.

B. longiceps, Leidy, Proc. Acad. Nat. Sci. Philad. v. 289. *Planaria longiceps*, Dugés, Ann. des Sci. Nat. 1st ser. xxi. 83, pl. ii. f. 21.

B. parasitica, Leidy, l. c. v. 242. ? *Vortex candida*, Girard, Proc. Bost. Soc. Nat. Hist. iii. 264.

B. rustica, Leidy, l. c. v. 243.

Anocelis, n. g. Corpus depressum, elongato-ovale, sæpe antice truncatum. Os post medium subcentrale. Ocelli nulli. Fluviatiles.

A. cæea. *Planaria cæca*, Dugés. Ann. des Sci. Nat., 1st ser. xxi. 83, pl. ii. f. 20.

A. fuliginosa. *Planaria fuliginosa*, Leidy, l. c., v. 225.

Oligocelis, n. g. Corpus oblongum depressum, antice auriculatum. Ocelli sex in acervos duos parallelos subterminales dispositi. Os post medium subcentrale. Tubus cibarius ramis arbusculiformibus. Fluviatiles.

O. pulcherrima. *Dendrocœlum pulcherrimum*, Girard. Proc. B. S. N. H. iii. 265. Nordam. Monatsb. ii. 2.

POLYCELIDÆ.

Corpus oblongum, planum, dilatatum. Ocelli numerosi marginales. Os post medium subcentrale, œsophago cylindrico, longe protractili. Apertura genitalis retrorsum sita. Fluviatiles.

Polycelis, Hemp. et Ehrenb. (Symbolæ Physicæ, Phytoz. Turbell. No. 7. 1830) genus unicum.

P. nigra, Hemp. et Ehrenb. *Planaria nigra*, Müll., J. Johnston, Duges, etc.

P. brunnea. *Planaria brunnea*, Müll.

P. Viganensis. *Planaria Viganensis*, Dugés, Ann. des Sci. Nat. 1st ser. xxi. 84, t. ii. f. 23–25.

GEOPLANIDÆ.

Corpus elongatum depressum v. depressiusculum, subtus pede sat distincto. Caput continuum v. discretum. Ocelli duo vel plurimi, in capite dispositi. Os post mediale. Œsophagus protractilis campanulatus, margine sæpius sinuoso. Apertura genitalis pone os. Terricolæ.

Geoplana, n. g. Corpus depressum v. depressiusculum, elongatum v. lineare, capite continuo. Ocelli numerosi marginales, v. in acervos submarginales, in capite dispositi.

G. vaginuloides. *Planaria vaginuloides*, Darwin, Ann. Mag. Nat. Hist. 1st ser. xiv. 244. *Polycelis vaginuloides* Diesing, Syst. Helminth. i. 172.

G. bilinearis. *Planaria bilinearis*, Darwin. l. c. xiv. 245. *Polycelis bilinearis*, Diesing, l. c. i. 194.

G. pulla. *Planaria pulla*, Darwin, l. c. xiv. 245. *Polycelis pulla*, Diesing, l. c. 192.

G. pallida. *Planaria pallida*, Darwin, l. c. xiv. 245. *Polycelis pallida*, Diesing, l. c. i. 194.

G. Tasmanica. *Planaria Tasmanica*, Darwin, l. c. xiv. 246. *Polycelis tasmanica*, Diesing, l. c. i. 193.

G. nigro-fusca. *Planaria nigro-fusca*, Darwin, l. c. xiv. 245. *Polycelis nigro-fusca*, Diesing, l. c. i. 193.

G. lapidicola, infra.

Bipalium, n. g. Corpus lineare, depressiusculum. Caput discretum, lunatum, transversum, auriculis longis retrorsum tendentibus. Ocelli numerosi, minuti, in capite, plerumque in ejus marginibus dispositi. Os centrale v. postcentrale. Apertura genitalis inter os et extremitatum posteriorem, sæpius ad dimidiam distantiæ.

B. maculatum, fuscatum, trilineatum, et virgatum, infra.

Rhynchodemus, Leidy. (Proc. Acad. Nat. Sci. Philad. v. 589. 1851.) Corpus elongatum, subdepressum, antrorsum attenuatum, utrinque obtusum. Ocelli duo subterminales.

R. terrestris, Leidy, l. c. v. 289. *Planaria terrestris*, Dugès, Ann. d. Sci. Nat. 1st ser. xxi. 82, pl. 2, f. 18.

R. sylvatica, Leidy, l. c. v. 289. *Planaria sylvatica*, Leidy, l. c. v. 241.

POLYCLADIDÆ.

Corpus planum v. depressum oblongum, dilatatum, capite continuo. Ocelli nulli. Os subcentrale. Apertura genitalis anteos. Terricolæ.

Polycladus, Blanchard, (Ann. des Sci. Nat. 3d. ser. viii. 146–149, 1845.) genus unicum.

P. Gayi, Blanch. l. c.

P. maculatus, Diesing, l. c. i. 201. *Planaria maculata*, Darwin, l. c. xiv. 246.

P. semilineatus, Diesing, l. c. i. 201. *Planaria semilineata*, Darwin, l. c. xiv. 246.

P. elongatus. *Planaria elongata*, Darwin, l. c. xiv. 246. *Polycladus Darwinii*, Diesing, l. c. i. 202.

Descriptiones specierum novarum.

1. Thysanozoon australe, St. Proc. Acad. Nat. Sci. Philad. vii. 389. Corpus ovale, utrinque late rotundatum, supra fusco nigroque maculatum, papillis subæqualibus, regulariter dispersis, ad 60 obsessum. Papillæ sat grandes, fuscæ, tuberculis prominentibus flavis gemmatæ. Tentacula mediocria, graciliora. Ocelli conferti in acervum parvum, ovatum, postice macula alba cuneiformi interruptum. Long. 1; lat. 0·6 poll.

Hab. In portu Jacksoni Australiensi; inter spongias e profunditate sex orgyiarum.

2. Proceros albicornis. Late ovalis, supra fuscus, albo-punctatus, tentaculis albis. Ocelli magnitudine variabiles, in areola clara, magna, oblongo-ovali dispositi, majores anteriores. Long. 1·3; lat. 0·9 poll.

Hab. Ad oras insulæ "Jesso" Japoniæ Borealis; sublittoralis inter lapides algosos.

3. Eurylepta fulminata, St. l. c. vii. 380. Oblongo-ovalis, supra rubrofusca, viridi-punctata, fasciis obliquis rufis fusco-marginatis, in medio convenientibus. Tentacula lata, approximata, macula flava ad basim exteriorem. Ocelli in acervum unicum in papilla minuta, ovali, cervicali, situm. Long. 1·25; lat. 0·58 poll.

Hab. Prope oras insulæ "Loo Choo"; inter corallia e profunditate orgyiarum duarum.

4. Eurylepta coccinea. Oblonga, utrinque rotundata, supra rubra, maculis albis inconspicuis; lateribus fere parallelis, marginibus purpureis undulatis.

Tentacula minora, approximata. Ocelli in acervum minnutum pone tentacula situm. Long 2; lat. 0·7 poll.

Hab. Ad insulam "Loo Choo"; sublittoralis in rupibus.

5. EURYLEPTA GUTTATO-MARGINATA, St. l. c. vii. 380. Oblongo-ovata, postice latior; supra alba, margine serie macularum pupurearum ornata. Tentacula brevia. Ocelli circiter 12 in acervum minutum pone tentacula situm. Long. 0·5; lat. 0·28.

Hab. Ad insulam "Loo Choo"; littoralis in rupium fissuris.

6. EURYLEPTA INTERRUPTA, St. l. c. vii. 380. Ovalis, supra pallide fusca, fascia longitudinali mediana nigra interrupta; marginibus linea 1ma aut extima hyalina, 2da nigra, 3tia aurantiaca, 4ta vel interna, nigro-fusca et latiore; omnibus (antice excepta) frequenter interruptis. Tentacula prominentia. Ocelli cervicales in acervos duos lunatos, parallelos, antrorsum convexos aggregati. Long. 0·75; lat. 0·31 poll.

Hab. Ad oras insulæ "Loo Choo"; littoralis sub lapidibus in locis arenosis.

7. EURYLEPTA NIGRA. Elongato-elliptica, supra nigra, rufo-marginata, subtus albens. Tentacula minora, graciliora, nigra, ad apicem alba. Papilla ocellifera cervicalis, in linea alba longitudinali, mediana, brevi sita. Long. 3; lat. 0·9.

Hab. Ad oras insulæ "Ousima" Japoniæ Australis; littoralis inter rupes.

8. EURYLEPTA JAPONICA. Oblongo-ovalis, marginibus undulatis; supra fulva, albo punctata; tentaculis approximatis, prominentibus, subtriangularibus, acutis. Ocelli numerosi, magnitudine æquales, in areola parva, ovata, antice acuminata, juxta tentacula sita, conferti. Long. 2.9; lat. 2.9; lat. 1.3 poll.

Hab. Ad oras insulæ "Jesso" Japoniæ Borealis; sublittoralis inter lapides.

9. CRYPTOCŒLUM OPACUM. Subovale, postice parum latiore, utrinque late rotundatum, colore nigro-purpureo-fuscum, marginibus incoloratis. Caput interdum depositione nigra irregulari, in loco usitata ocellorum acervorum. Long. 0·2; lat. 0·125, poll.

Hab. In portu Sinensi "Hong Kong;" parasiticum in *Echinarachnio* magno purpureo e profunditate sex orgyiarum.

10. TYPHLOCOLAX ACUMINATUS. Depressiusculus, gracilis, antice subattenuatus et truncatus, ad trientem posteriorem corporis partem latior et convexior; cauda acuminata. Colore supra sanguineus, maculis 2–3 nigris indistinctis ad summum dorsum. Long. 0·1; lat. 0·03 poll.

Hab. In freto Behringii; parasiticus in *Chirodotæ* specie e profunditate decem orgyiarum.

11. ELASMODES ACUTUS. *Leptaplana acuta*, St. l. c. vii. 381. Lanceolatus, utrinque acutus, ante medium quam post medium vix latior, subpellucidus pallide griseus, bruneo-maculatus. Ocelli pauci in acervos duos, parvos, arcuatos, ab extremitate anteriore parum remotos. Long. 0·33; lat. 0·14 poll.

Hab. In portu Sinensi "Hong Kong;" in fundo limoso profunditatis sex orgyiarum.

12. ELASMODES TENELLUS. Elongato-ovatus, ad caput latior; hyalino-albus, supra macula elongata mediana pallide fusca. Ocelli inconspicui, in acervos duos elongatos sparsim dispositi. Lon. 1·6 poll.

Hab. Ad insulam "Ousima;" littoralis inter lapides.

13. LEPTOPLANA SCHÖNBORNII. Parvula, ovata, pallida, supra minute cupreo-maculata. Ocelli in acervos duos oblongos, antice attenuatos ex secundariis, postice ex primariis constatos. Long. 0·2; lat. 0·1 poll.

Hab. Prope Promontorium Bonæ Spei; in fundo saxoso profunditatis 20 orgyiarum.

14. LEPTOPLANA FUSCA. Subelongata, utrinque rotundata, antice parum latior, supra fusca. Ocelli in areola incolorata, in acervos duos oblongos, quadrangulatos, antrorsum convergentes aggregati; primarii posteriores,

secundarri anteriores, utrinque dimidium partem acervorum formantes. Long. 0·75 ; lat. 0·25 poll.

Hab. Ad oras insulæ Sinensis "Hong Kong ;" littoralis, sub lapidibus in locis saxosis.

15. LEPTOPLANA TRULLÆFORMIS, St., l. c. vii. 381. Elongata, antice late rotundata, postice attenuata subacuta, supra pallide fusca, fascia mediana obscuriore pone ocellos. Ocelli in areola incolorata; primariorum acervi oblongi obliqui, antrorsum convergentes, utroque circiter 16; secundarii in acervos quinque, quorum tribus ante, duobus parvis pone primariorum acervos. Long. 0·75; lat. 0·22 poll.

Hab. In freto "Li-yu-moon," prope insulam Sinensem "Hong Kong;" in fundo lapidoso profunditatis 25 orgyiarum.

16. LEPTOPLANA MACULOSA. Oblongo-ovata; supra pallide grisea, maculis fuscis sparsis, medianis obscuris; marginibus hyalinis. Ocelli primarii in acervos duos ovatos aggregati, utroque septem; acervi in extremitatibus areolæ hyalinæ, transversæ, arcuatæ, positi. Ocellorum secundariorum acervi duo parvi aute medium areolæ siti. Ocelli 4–6 in areola inter primarios dispersi. Long. 0·8 ; lat. 0·4 poll.

Hab. In portu "San Francisco" Californiæ; littoralis sub lapidibus in locis limosis.

17. LEPTOPLANA DELICATULA. Subovata, tenerrima, marginibus undulatis; supra rufo-fusca, versus marginem pallescens. Ocellorum primariorum acervi in umbonibus, utroque circiter 14. Ocelli secundarii valde numerosi, minuti, in acervos quatuor elongatos, ante et pone alteros sitos. Long. 0·6; lat. 0·3 poll.

Hab. In portu "Hong Kong"; littoralis inter ulvas in locis arenosis.

18. LEPTOPLANA OBLONGA. Subelongata, antice truncata v. subtruncata, postice attenuata et acuta, supra fusca versus marginem pallescens. Ocelli in areola hyalina; primarii in summa parte umbonum, utroque 8; secundarii in acervos elongatos arcuatos longitudinales duos inter primarios,—sparsi. Long. 1·8 ; lat. 0·45 poll.

Hab. In portu "Simoda" Japoniæ; sublittoralis in rupium fissuris.

19. LEPTOPLANA HUMILIS. Ovata, supra pallide griseo-brunnea, fasciis obscurioribus radiatim dispositis; fascia incolorata mediana interrupta. Ocelli primarii in umbonibus, utroque 12–15; secundarii inconspicui ante et pone primarios sparsi. Long. 1 ; lat. 0·7 poll.

Hab. Prope oras insulæ "Jesso"; in fundo arenoso profunditatis quatuor orgyiarium.

20. LEPTOPLANA PATELLARUM, St. l. c. vii. 389. Subovata, utrinque late rotundata, postice parum latior; supra fulva, fascia lata mediana et maculis obscurioribus; subtus alba. Ocelli primarii in umbonibus utroque circiter 10 ; secundarii in acervos duos oblongos approximatos ante primarios sitos. Long. 0·9 ; lat. 0·65 poll.

Hab. in "Simon's Bay" prope Promontorium Bonée Spei; littoralis, in rupibus sub *Patellis* magnis reperta.

21. LEPTOPLANA PUNCTATA. Sat grandis, oblongo-ovata, tenuis, subpellucida, supra punctis rubro-fuscis regulariter adspersis, et fascia longitudinali mediani rubro-fusca, antice inter acervos ocellorum incipiente. Ocelli primarii in umbonibus parvis, utroque 8 ; secundarii in acervos duos parvos triangulares pone primarios et eis confluentes, utroque circiter 10.

Hab. Ad insulam "Ousima" ; sublittoralis inter lapides algosos.

22. DIONCUS BADIUS, St. l. c. vii. 389. Ovalis, utrinque subtruncatus, supra badius, ex parte albo-punctatus. Ocelli numerosi minuti, superficiem totam umbonum translucidorum occupantes, utroque circiter 30. Long. 1·5 ; lat. 0·75 poll.

Hab. In portu Jacksoni Australiensi; littoralis sub lapidibus.

23. DIONCUS OBLONGUS, St. l. c. vii. 389. Oblongo-ovalis, supra pallide fusco-griseus. Ocellorum acervi in summa parte umbonum pellucidorum siti, ita annulo hyalino simulate cincti. Ocelli subgrandes circiter 15 in utroque acervo. Long. 1 ; lat. 0·35 poll.
Hab. In portu Jacksoni ; littoralis.

24. PACHYPLANA LACTEA. Exacte ovata, lactea, prope marginem obscurior lineis granulæ (ova ?) radiantibus et divisis. Papillæ ocelliferæ parvæ, ad partem quintam anteriorem corporis longitudinis sitæ, et parte sexta latitudinis remotæ. Ocelli magni sex in utroque papilla ; alii pauci minuti in margine anteriore. Long. 1·5 ; lat 1 poll.
Hab. Ad oras insulæ "Ousima" ; sublittoralis in locis lapillosis et algosis sub lapidibus magnis.

25. PROSTHIOSTOMUM GRANDE. Valde elongatum, antice subtruncatum retrorsum attenuatum acutum ; colore supra pallide fulvum, sparsim rubro-maculatum ; fascia longitudinali mediana fusca reticulata. Ocelli occipitales in acervum elongato-triangularem, longitudinaliter linea mediana bisectum, ad vicesimam partem anteriorem corporis situm. Ocelli marginales in margine frontali modo dispositi. Long. 6 ; lat. 0·4 poll.
Hab. Ad oras insulæ "Ousima" ; sublittorale.

26. PROSTHIOSTOMUM OBSCURUM. *Leptoplana obscura*, St. l. c. vii. 381. Elongato-ovale, antice subtruncatum, supra pallide rubro-fuscum, sæpe rufo-maculatum, fascia mediana pallidiore. Ocellorum acervus occipitalis e linea mediana bipartitus ; utrinque linearis ocellis 3–4 magnis, et 5–6 parvis posterioribus divergentibus. Ocelli reliqui submarginales, frontales tantum, sparsi. Long. 1 ; lat. 0·34 poll.
Hab. In portu "Hong Kong" ; sublittoralis in locis arenosis et algosis.

27. PROSTHIOSTOMUM AFFINE. Elongatum, antice subtruncatum et in medio sinuatum supra rufo-variegatum, fascia longitudinali mediana obscuriore. Ocelli minuti, in lateribus areolæ pellucidæ, parvæ conferti, et secundum marginem anteriorem dense distributi. Os infra ad partem sextam corporis situm. Œsophagus protractilis in tubo elongato, subclavato, truncato, prope extremitatem constricto. Long. 0·9 ; lat. 0·2. poll.
Hab. In portu Sinensi "Hong Kong" ; littorale inter ulvas in locis arenosis.

28. PROSTHIOSTOMUM COLLARE. *Leptoplana collaris*, St. l. c. vii. 381. Oblongum, antice truncatum, fronte sepius concava ; postice attenuatum acutum ; supra badium, lineis longitudinalibus fuscis duobus in corpore, unica mediana in capite ; fascia transversa alba cervicali. Ocelli numerosi in acervum occipitalem v-formem, antrorsum acutum. Ocelli marginales ? Long. 0·5 ; lat. 0·29 poll.
Hab. Ad oras insulæ "Loo Choo" ; sublittorale inter algas in rupium fissuris.

29. PROSTHIOSTOMUM CONSTIPATUM. Oblongum, utrinque rotundatum, supra punctis numerosis obscure fulvis, postice in medio confertis ; antice fascia pallida longitudinali mediana, œsophagi positionem indicante. Ocelli acervi occipitalis pauci, inæquales, in areola pellucida, ovali, bilobata adspersi ; reliqui numerosi æquales in acervum arcuatum a margine anteriore paullo remotum. Long. 1 ; lat. 0·27 poll.
Hab. Ad oras insulæ "Jesso" Japoniæ Borealis ; sublittorale inter lapides.

30. PROSTHIOSTOMUM CRIBARIUM. Oblongum, lateribus fere parallelis, extremitate anteriore subtriangulari, in verticem obtusum finiente ; extremitate posteriore late rotundata ; colore supra fusco-rufum, maculis parvis incoloratis confertis ; margine lactea. Ocelli valde numerosi, in acervum hippocrepi formem, magnum, prope verticem situm, conferti. Ocelli marginales pauci, secundum marginem anteriorem irregulariter adspersi. Long. 2 ; lat. 0·9 poll.
Hab. Prope oras insulæ "Jesso" ; in fundo arenoso et algoso profunditatis sex orgyiarum.

31. PROSTHIOSTOMUM CRASSIUSCULUM. Elongate ovale, crassiusculum, supra obscure fuscum, subtus pallide rufum. Ocelli occipitales numerosi, minuti, acervum ovalem formantes in areola pellucida ad partem septimam anteriorem corporis sita; ocelli marginales in margine frontali et antero-laterali, post acervum occipitalem extensi. Long. 2·3; lat. 0·9 poll.

Hab. Ad insulam "Ousima"; littorale inter lapides.

32. PROSTHIOSTOMUM TENEBROSUM. Elongatum, utrinque rotundatum, supra obscure griseum vel subnigrum, areola ocellifera vix pallidiore, itaque ocellorum acervus ovalis occipitalis non bene distinctus. Margo pellucida; ocelli marginales antice distincte aperti. Long. 2; lat. 0·3 poll.

Hab. In portu "Hong Kong"; littorale sub lapidibus in locis arenosis.

33. PROSTHIOSTOMUM SPARSUM. *Leptoplana sparsa*, St. l. c. viii. 381. Suboblongum, antice late rotundatum postice parum angustatum acutum; supra pallide fuscum unicolore, interdum macula obscuriore prope extremitatem posteriorem. Ocelli numerosi æquales in acervum ellipticum occipitalem aggregati; interdum utrinque acervo minuto inconspicuo. Ocelli marginales in marginibus anterioribus et antero-lateralibus conferti. Long. 1; lat. 0·5 poll.

Hab. In portu insulæ "Kikaisima"; Japoniæ Australis; sublittorale inter confervas.

34. DIPLONCHUS MARMORATUS. Oblongo-ellipticus, antice subangustatus, postice rotundatus, supra brunneus, maculis albis reniformibus marmoratus. Ocelli in papilla elliptica bilobata; alii in acervum linearem ab hac papilla antrorsum extensum. Long. 3·3; lat. 1·4 poll.

Hab. Ad oras insulæ "Ousima"; sublittoralis inter lapillos.

35. STYLOCHUS CORNICULATUS, St. l. c. vii. 381. Oblongus, extremitatibus late rotundatis; supra fulvo-maculatus. Tentacula triangulato-pyramidalia facie exteriore ocellis minutis ubique confertis. Areola clara circularis sine ocellis inter tentacula sita. Long. 2; lat. 0·1 poll.

Hab. In portu "Hong Kong"; in conchis bivalvis desertis e fundo limoso profunditatis 6 orgyiarum.

36. STYLOCHUS OBSCURUS. Subovatus, antice latior, supra obscure glaucus, maculis subnigris, in linea mediana confertis. Tentacula parva, inconspicua in corpore obscuro. Areola pellucida nulla. Ocelli numerosi, minuti, superficiem tentaculorum totam tegentes. Long. 1·7; lat. 1 poll.

Hab. Ad oras insulæ "Jesso"; sublittoralis.

37. STYLOCHOPLANA TENERA. Ovato-cordata, pertenuis, capite dilatato. Corpus hyalinum, supra fasciis duobus centralibus pallide griseis. Tentacula in areola pura. Ocelli in acervum transversum inter tentacula utrinque ad eorum basim extensum. Long. 0·9; lat. 0·6 poll.

Hab. In mari Atlantico inter 20° et 30° lat. bor.; pelagica.

38. STYLOCHOPLANA RETICULATA. *Stylochus reticulatus*, St. l. c. vii. 381. Late ovata, supra pallide brunnea, fusco-maculata, filis nigro-punctatis reticulata. Tentacula et ocelli in areola clara ad quartam anteriorem corporis sita. Ocelli in acervos quatuor dispositi, quorum duo ad basim anteriorem tentaculorum, et duo inter et ante tentacula siti. Long. 2; lat. 1·5 poll.

Hab. Ad oras insulæ "Loo Choo": sublittoralis in rupium fissuris.

39. CALLIOPLANA MARGINATA. Ovalis, tenuis; supra nigro-fuscus margine cinnabarino. Tentacula parva, approximata, gracilia, styliformia, ad apicem truncata; in areola alba, parva, lunata, transversa sita. Ocelli ad latus exteriorem tentaculorum prope basim, et in acervos duos lineares inter tentacula. Long. 2·4; lat. 1·1 poll.

Hab. Ad oras insulæ "Ousima"; sub lapidibus in profunditate 4 pedum.

40. STYLOCHOPSIS CONGLOMERATUS. Oblongo-ovalis, antice subtruncatus aut late rotundatus, structura paullo crassa; supra pallide griseus, maculis nigri-

cantibus angularibus acute definitis, confertis. Tentacula remota, brevia, ad apicem obtusa. Ocelli magni in tentaculis, alii minuti in acervum rhomboidalem inter et post tentacula; reliqui in margine anteriore sparsim distributi. Long. 1·4; lat. 0·55 poll.

Hab. Ad insulam "Ousima"; sub lapidibus in profunditate pedum duorum.

41. STYLOCHOPSIS LIMOSUS. Amplus, oblongo-ovalis, crassiusculus, sed mollis et mucosus; supra pallide fuscus, maculis oblongis, parvis, numerosis, griseo-fuscis adspersus. Tentacula remota. Ocelli ad tentacula et in margine anteriore corporis sparsim distributi. Long. 3; lat. 1·3 poll.

Hab. in sinu insulæ "Ousima;" sublittoralis in fundo arenoso et algoso sub lapidibus.

42. TRACHYPLANA TUBERCULOSA. Oblongo-ovalis, structura paullo firma et dura, tuberculis minutis supra obsessus; colore flavus, tuberculis carneis. Tentacula parvula, hyalina. Ocelli pauci in superficie tota tentaculorum sparsim dispositi. Long. 1·4; lat. 0·6 poll. *Hab.* in sinu insulæ "Ousima;" inter lapides e profunditate 4 pedum.

43. PLANARIA SINENSIS. Oblonga, postice acuta; fronte obtuse triangulari, in medio valde producta; auriculis parvulis, capite quam corpore latitudine minore. Colore corpus supra variabile, nigrum, fuscum v. fulvum; margine hyalina; macula hyalina stomachali mediana. Pigmentum ocellorum rotundatum, in globulo vitreo ovali, ad latus internum approximatum. Long. 0·5; lat. 0·15 poll.

Hab. in rivulis insulæ Sinensis "Hong Kong."

44. PLANARIA CINEREA. Oblonga, subconvexa, postice attenuata, lateribus leviter convexis; fronte triangulari, in media paullo producta; auriculis mediocribus. Corpus colore supra cinereum, fascia mediana subpinnata obscuriore. Ocelli auriculis oppositi; pigmento ovali ad latus internum globuli mediocris. Long. 0·4; lat. 0·11 poll.

Hab. in fossis insulæ "Ousima," Japoniæ Australis.

45. PLANARIA BADIA. Oblonga, convexiuscula, postice acuta, lateribus leviter convexis; fronte acute triangulato-producta; auriculis mediocribus. Corpus colore supra badium, ad caput pallidus; macula stomachali oblonga pellucidula post-mediali. Ocelli auriculis oppositi: pigmento substellato ad latus internum globuli sat magni. Long. 0·4; lat. 0·09 poll.

Hab. in fossis insulæ "Loo Choo."

46. FOVIA GRACILICEPS. Gracilis, supra grisea, post medium latior et convexior, antice angustata; capite valde elongato, gracili; fronte acute triangulata, cervice vix latiore; auriculis nullis. Cauda apiculata. Ocelli approximati, ad quintam anteriorem corporis siti; pigmento reniformi. Long. 0·2; lat. 0·04 poll.

Hab. in portu "Hong Kong;" littoralis in locis arenoso-limosis.

47. FOVIA TRILOBATA. Oblonga, depressa, antrorsum subangustata, retrorsum rotundata; supra rubra, fascia mediana pallidiore, et linea transversa nigricante pone ocellos; subtus alba. Ocelli octavam partem corporis ab apice remoti; pigmento semicirculari ad latus internum globulorum ovalium. Long. 0·2; lat. 0·05 poll.

Hab. in sinu "Avatscha" Kamtschatkæ; littoralis inter lapides.

48. GEOPLANA LAPIDICOLA. Elongata, subconvexa, post medium parum latior, lateribus fere parallelis, extremitatibus rotundatis; supra grisea, fascia mediana fulva, marginibus pallidis. Ocelli vix numerosi in lateribus extremitatis anterioris sparsi, majores utrinque 3-4 latero-frontales. Long. 1·2; lat. 0·1 poll.

Hab. ad insulam "Loo Choo;" sub lapillis in sylvis.

49. BIPALIUM VIRGATUM. Sat gracile, postice obtusum; ad cervicem angustatum. Auriculæ capitis graciles sepius retrorsum curvatæ. Frons arcuata, in medio leviter sinuata. Corpus colore supra pallide aurantiacum, fasciis nigrofulvis quinque longitudinalibus, lateralibus marginalibus,—virgatum; fascia me-

diana sola caput transiente. Ocelli valde numerosi, in marginibus capitis et cervicis dense distributi. Long. 2 ; lat. 0·15 poll.

Hab. ad insulam " Loo Choo" ; inter lapillos et folia putrida.

50. Bipalium maculatum. Subdepressum ; capite auriculis sat brevibus, fronte arcuata. Corpus supra fulvum, maculis nigris confertis, fascia mediana pallida nigro-marginata ; auricularum marginibus posterioribus nigris. Ocelli valde numerosi in acervum arcuatum frontalem submarginalem. Long. 3 ; corporis lat. 0·2 ; capitis lat. 0·3 poll.

Hab. ad insulam " Ousima ;" sub foliis et lignis putridis in humidis.

51. Bipalium trilineatum. Elongatum, retrorsum attenuatum acutum ; cervice subangustata ; margine posteriore auricularum recta. Frontis margo 10-dentata, dentibus parvis distantibus. Corpus colore supra pallide flavo-fuscum, in medio longitudinaliter nigro trilineatum ; marginibus capitis et cervicis nigris. Ocelli numerosi submarginales in capite. Long. 1·6 ; corporis lat. 0·22; capitis lat. 0·33 poll.

Hab. in collibus insulæ " Jesso ;" inter folia putrida.

52. Bipalium fuscatum. Grande, depressum, postice attenuatum acutum, supra nigro fuscum, margine frontali pallida. Ocelli in marginibus capitis sparsi. Long. 5 ; lat. 0·3 poll.

Hab. prope urbem Japonicam " Simoda" sub foliis putridis.

Description of Thirteen New Species of UNIONES, from Georgia.

BY ISAAC LEA.

Unio Blandianus. Testâ tuberculatâ, subquadratâ, subinflatâ, subæquilaterali, anticè rotundatâ, ad basim emarginatâ; valvulis percrassis, anticè crassioribus ; natibus elevatis, compressis, ad apices granulatis ; epidermide vel castaneâ vel luteo-fuscâ ; dentibus cardinalibus magnis, percrassis, crenulatis, in utroque valvulo duplicibus ; lateralibus rectis, brevibus, percrassis crenulatisque ; margaritâ argenteâ et iridescente.

Hab. Othcalooga Creek, Gordon county, Georgia. Bishop Elliott.

Unio concestator. Testâ lævi, ellipticâ, inflatâ, inæquilaterali, anticè rotundatâ ; valvulis subcrassis, anticè crassioribus ; natibus prominulis ; epidermide nigricanti, eradiatâ, transversè striatâ ; dentibus cardinalibus subcrassis, duplicibus, crenulatisque ; lateralibus longis subcurvisque ; margaritâ vel purpureâ vel salmonis colore tinctâ et iridescente.

Hab. Creeks near Columbus, Georgia. Bishop Elliott.

Unio extensus. Testâ lævi, valdè transversâ, valdè compressâ, ad latere planulatâ, valdè inæquilaterali, posticè subangulatâ ; valvulis subcrassis ; natibus prominulis, compressis ; epidermidè tenebroso-fuscâ, transversè striatâ ; dentibus cardinalibus subcrassis, acuminatis ; lateralibus prælongis, rectis, posticè incrassatâ ; margaritâ albâ et iridescente.

Hab. Dry Creek, near Columbus, Georgia. Bishop Elliott.

Unio pyriformis. Testâ lævi, obliquâ, oviformis, valdè compressâ, valdè inæquilaterali, posticè biangulatâ ; valvulis subcrassis, anticè crassioribus ; natibus subprominentibus ; epidermide luteo-castaneâ, nitidâ ; dentibus cardinalibus subgrandibus crenulatisque ; lateralibus subbrevibus subcrassisque ; margaritâ vel salmonis colore tinctâ vel albâ et iridescente.

Hab. Near Columbus, Georgia. Bishop Elliott.

Unio Columbensis. Testâ lævi, oblongâ, subinflatâ, valdè inæquilaterali, posticè angulatâ ; valvulis subcrassis ; natibus prominulis et concentricè undulatis ; epidermide tenebroso-fuscâ ; dentibus cardinalibus subgrandibus, elevatis, acuminatis crenulatisque; lateralibus prælongis, lamellatis subrectisque; margaritâ albâ et iridescente.

Hab. Creeks near Columbus, Georgia. Bishop Elliott.

Unio fallax. Testâ lævi, ellipticâ, subinflata, inæquilaterali, anticè et posticè regulariter rotundatâ; valvulis subtenuibus; natibus prominulis, ad apicem minutè undulatâ; epidermide luteo-fuscâ, valdè radiatâ; dentibus cardinalibus erectis, compressis, acuminatis; lateralibus subrectis sublongisque; margaritâ vel albâ vel purpureâ vel salmonis colore tinctâ.

Hab. Streams near Columbus, Georgia. Bishop Elliott; and French Broad River, Tenn., Mr. Joseph Clark.

Unio intercedens. Testâ lævi, ellipticâ, subinflatâ, valdè inæquilaterali, posticè subangulatâ; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscâ, posticè radiatâ, anticè subsulcatâ; dentibus cardinalibus parvis, angulatis, in utroque valvulo duplicibus; lateralibus longis, lamellatis subrectisque; margaritâ purpureâ.

Hab. Streams near Columbus, Georgia. Bishop Elliott.

Unio excavatus. Testâ lævi, subtriangulari, valdè inflatâ, subæquilaterali, posticè angulatâ; valvulis subcrassis, anticè crassioribus; natibus valdè prominentibus et tumidis; epidermide vel luteâ vel luteo-olivâ, politâ, radiatâ, anticè subsulcatâ; dentibus cardinalibus magnis, erectis, conico-compressis, crenulatis, in utroque valvulo duplicibus; lateralibus subbrevibus, lamellatis crassisque; margaritâ albâ et iridescente.

Hab. Othcalooga Creek, Gordon County, Georgia; Bishop Elliott; and Etowah, Georgia, Rev. Geo. White. Alabama river, Claiborne, Alabama, Judge Tait.

Unio radians. Testâ lævi, ellipticâ, subinflatâ, inæquilaterali, posticè rotundatâ; valvulis subtenuibus, anticè crassioribus; natibus prominulis, ad apices undulatis; epidermide luteâ, politâ, valdè radiatâ; dentibus cardinalibus subgrandibus, erectis, subconicis crenulatisque; lateralibus sublongis, lamellatis subrectisque; margaritâ vel albâ vel rosaceâ et valdè iridescente.

Hab. Othcalooga Creek, Gordon county, Georgia. Bishop Elliott.

Unio rubellinus. Testâ plicatâ, transversâ, subtriangulari, subinflatâ, valdè inæquilaterali, posticè acutè angulatâ, anticè rotundatâ; valvulis subcrassis, anticè crassioribus; natibus prominulis, ad apices undulatis; epidermide rubiusculâ, nitidâ; dentibus cardinalibus parvis, erectis acuminatisque; lateralibus longis lamellatis subrectisque; margaritâ rubidâ et iridescente.

Hab. Othcalooga Creek, Gordon county, Georgia. Bishop Elliott.

Unio umbrosus. Testâ lævi, ellipticâ, ventricosâ, subæquilaterali, posticè obtusè angulatâ, compressâ et emarginatâ; valvulis crassis, anticè crassioribus; natibus prominulis; epidermide tenebroso-fuscâ, posticè obsoletè radiatâ; dentibus cardinalibus subgrandibus, erectis, obtuso-conicis; lateralibus sublongis, subrectis subcrassisque; margaritâ tenebroso-purpureâ et iridescente.

Hab. Othcalooga Creek, Gordon county, Georgia. Bishop Elliott.

Unio apicinus. Testâ lævi, ellipticâ, subcompressâ, subæquilaterali, posticè obtusè angulatâ; valvulis subtenuibus; natibus prominulis, ad apices reguliter et decorè undulatis; epidermide fusco-lutescente, radiis minutis induta; dentibus cardinalibus parvulis, obliquis, compressis, subacutis crenulatisque; lateralibus sublongis, lamellatis subcurvisque; margaritâ albidâ et iridescente.

Hab. Othcalooga Creek, Gordon county, Georgia. Bishop Elliott.

Unio Othcaloogensis. Testâ lævi subtriangulari, ventricosâ, subæquilaterali; valvulis crassis, anticè crassioribus, natibus subgrandibus, ad apices undulatis; epidermide lutescente, perlævi, nitidâ, eradiatâ; dentibus cardinalibus crassis, obliquis, crenulatis et in utroque valvulo duplicibus; lateralibus brevibus subrectisque; margaritâ albâ et iridescente.

Hab· Othcalooga Creek, Gordon county, Georgia. Bishop Elliott.

Catalegue of Birds collected on the River Muni, Western Africa, by Mr. P. B DuChaillu in 1856, with notes and descriptions of new species.

BY JOHN CASSIN.

The collection of birds, of which the succeeding is a catalogue, was made by Mr. DuChaillu during a journey up the River Muni, made with the hope of being able to reach the supposed source of the River Congo as laid down in recent maps. In this, however, he did not succeed, being prevented by ranges of high mountains, and the fact that the nations of negroes at the extreme point attained by him were unwilling to allow any of their people to accompany him, and apparently knew nothing of the nations beyond those mountains. He penetrated to a distance of 250 to 300 miles from the coast, and traced the Muni to its source.

As at Cape Lopez, Mr. DuChaillu did not collect birds of which numerous specimens had formerly been sent in his collections from the Gaboon and from the Moondah. This fact will account for the absence of some well known species from the present catalogue.

Mr. DuChaillu is at present about to undertake the ascent of the River Camma, lat. about 1.30 S., again hoping to reach the Congo, and if successful will attempt its ascent to its source. With this journey he will occupy the present year, and is amply provided with the necessary equipment for his arduous and perilous undertaking, through the liberality of gentlemen of this Academy.

1. GYPOHIERAX ANGOLENSIS, (Gmelin.)
Falco angolensis, Gm. Syst. Nat. i. p. 252, (1788.)
Gray's Genera, i. pl. 4. Jard. & Selby, Ill. Orn. pl. 13.
Adult specimens.

2. POLYBOROIDES RADIATUS, (Scopoli.)
Vultur radiatus, Scop.
Polyboroides typus, Smith.
Temm. Pl. Col. 307 ; Smith Ill. S. Af. Zool. Birds pl. 81, 82.
Several shades darker than any specimen in the Museum of the Academy or as represented in the plates cited. The fine cinereous color of this bird's plumage probably fades very readily. Adult specimens in the present collection.

3. CHAUNONOTUS SABINEI, (J. E. Gray.)
Thamnophilus Sabini, Gray, Zool. Misc. p. 7, (1842.)
Jard. & Selby, Ill. Orn. N. S. pl. 27.
Apparently not abundant in Equatorial Africa. One specimen only in this collection and one other only has been received in Mr. DuChaillu's collections. Adult, very nearly as figured above, but never, I think, having had quite so fierce an eye as in the plate above cited.

4. LANIARIUS PELI, (Bonaparte.)
Malaconotus Peli, Bonap. Consp. Av. p. 360, (1850.)
Laniarius lepidus, Cassin, Proc. Acad. Philada., vii. p. 327, (1855.)

5. TRICOPHORUS CALURUS, Cassin.
Tricophorus calurus, Cassin, Proc. Acad. Philada., viii. p. 158, (1856.)

6. TRICOPHORUS NOTATUS, Cassin.
Tricophorus notatus, Cassin, Proc. Acad. Philada., viii. 158, (1856.)

7. TRICOPHORUS TRICOLOR, nobis.
Allied to the preceding (*T. notatus*) but much smaller, and having the colors different. Bill nearly straight, culmen distinct; wing with the fifth and sixth quills longest; tail moderate.

Total length (of skin) about 6½ inches, wing 3, tail 3 inches.

Tail and its upper coverts dark chestnut, tinged with green on the outer edges of the feathers and paler beneath. Upper parts dark olive green, darkest on the head. Under parts yellow, clear and deeper on the throat; breast and middle of the abdomen tinged with greenish on the sides and flanks; under tail coverts pale yellow; exposed ends of secondary quills chestnut brown; primaries edged with greenish yellow on their outer webs. Bill dark, both mandibles tipped and with their cutting edges white; legs light bluish.

Sexes very nearly alike, females slightly smaller.

Hab. River Muni, Western Africa. Discovered by Mr. P. B. DuChaillu.

This is a small straight billed species belonging to the same group as our *T. notatus* and *T. canicapillus*, Hartlaub. It may be easily distinguished by its straight bill and chestnut colored tail, both of which characters strongly mark all of the specimens now before me, through some are evidently not in adult plumage.

The present bird appears to be allied also to *T. olivaceus*, Swainson, and to *T. icterinus*, Temm. Bonap. Cons. Av. p. 262. It is, however, but a distant relative of *T. barbatus*, Temm. Pl. Col. 88, not belonging to the same subgeneric group, and the description of *T. icterinus*, consisting as it does simply of a statement: "*Similis* Tr. barbato, *sed duplo minor*," is too careless and indefinite to be entitled to any consideration.

Six specimens have been received from Mr. DuChaillu, five of which are in the present collection and one in that from the River Moonda, formerly received.

8. Ixos ASHANTEUS, Bonaparte.
Ixos ashanteus, Bonap. Consp. Av. p. 266.

9. ANDROPADUS LATIROSTRIS, Strickland.
Andropadus latirostris, Strickl., Proc. Zool. Soc., London, 1844, p. 100.
Fraser, Zool. Typ. pl. 35?

Very fine adult specimens, with the yellow stripe on each side of the throat strongly marked. Sexes alike. I am not quite sure that Mr. Fraser's plate as above represents this species.

10. ANDROPADUS VIRENS, nobis.

Smaller than either *A. gracilirostris*, *latirostris* or *importunus*, but most resembling the last. Bill wide at base, rather short, cutting edge of the upper mandible distinctly crenated near the tip; wing moderate, rounded, fourth and fifth quills longest and nearly equal; tail rather short, with the feathers wide, plumage of the rump long, ample, soft; feet moderate.

Total length, about 6 inches, wing 3, tail 2⅞ inches.

Colors generally resembling those of *A. importunus*, but with the tail in the present species dark greenish brown. Entire plumage above dark olive green, rather lighter on the rump; upper tail coverts tinged with brown. Under parts yellowish green, the yellow predominating on the middle of the abdomen and under tail coverts. Inferior coverts of the wing light greenish yellow; quills edged on their inner webs with yellowish white. Tail greenish brown with the feathers slightly edged with yellowish green. Bill dark; legs light colored.

Hab. Cape Lopez and River Muni, Western Africa. Discovered by Mr. P. B. DuChaillu.

This is a smaller species than any hitherto known of this genus. It resembles in general appearance *A. importunus*, but can at once be distinguished by its smaller size and the more decided brown color of its tail, in which character it is more like the other two species mentioned above. This bird and *A. gracilirostris* and *latirostris* are evidently abundant species of Equatorial Western Africa, numerous specimens of each being in the collections of Mr. DuChaillu.

11. PLATYSTIRA MELANOPTERA, (Gmelin.)
Muscicapa melanoptera, Gm. Syst. Nat. i. p. 939, (1788.)
Buff. Pl. Enl. 567, fig 3; Jard. & Selby, Ill. Orn. i. pl. 9.

Evidently an abundant species throughout Western Africa.

The present collection contains a specimen marked as a young female which has the throat and breast white, with only a few spots of the chestnut of the adult.

12. PLATYSTIRA LEUCOPYGIALIS, Fraser.

Platystira leucopygialis, Fraser.

Fraser, Zool. Typ. Birds, pl. 34.

A beautiful and apparently abundant Flycatcher of Equatorial Africa. Specimens of both sexes are precisely as figured above.

13. MUSCIPETA FLAVIVENTRIS, Verreaux.

Muscipeta flaviventris, Verr. Cab. Jour. 1855, p. 103.

14. MUSCIPETA MELANOGASTRA, Swainson.

Muscipeta melanogastra, Sw. B. of W. Af. ii. p. 55.

15. BUTALIS EPULATUS, Cassin.

Butalis epulatus, Cassin, Proc. Acad. Philada., vii. p. 326, (1855.)

Several specimens of this little species are in the present collection, all of which are but very slightly different from our specimens as above described. Some specimens have, however, the under mandible entirely yellowish white, and the color of the tarsi and toes is much lighter, being in fact pale yellowish. The present specimens are more recent than the former.

16. BUTALIS COMITATUS, nobis.

Intimately allied to, and resembling the preceding, but much larger, with the under mandible entirely dark colored and all the plumage darker.

Bill wide at base with very strong bristles; wing rather long, fourth quill longest; tail moderate, with the feathers rather pointed.

Total length about 5 inches, wing 2½, tail 2¼ inches.

Entire upper parts dark cinereous, lighter on the rump, a narrow line of black around the neck behind. Quills and tail brownish black. Throat and middle of the abdomen white, breast and flanks dark cinereous. Inferior wing coverts ashy white, inner edges of quills white. Bill dark.

Hab. Muni river, Western Africa. Discovered by Mr. P. B. DuChailiu.

Much resembling *B. epulatus*, but larger and easily distinguished. One specimen in the present collection is all that I have seen.

17. MUSCICAPA MCCALLII, (Cassin.)

Pycnosphrys McCallii, Cassin, Proc. Acad. Philada., vii. p. 326, (1855.)

Presenting no characters differing from those given in the original description. A second specimen of this curious little bird is in the present collection. It does not belong to the genus *Pycnosphrys*, a specimen of the type of which is now in the Museum of the Academy. The present bird has a strong and rather wide bill, numerous long bristles and a rather long tail. In form only (not in color) it resembles the genus *Tyrannula*. My leisure at present will not warrant an extended examination.

18. DRYMOICA BAIRDII, Cassin.

Drymoica Bairdii, Cassin, Proc. Acad. Philada., vii. p. 327, (1855.)

Not different in any respect from the specimens originally described by me, and strongly characterized by the uniform and numerous transverse stripes of the under parts from the base of the under mandible to the inferior tail coverts including the *tibiæ*.

19. SYNCOPTA TINCTA, Cassin.

Syncopta tincta, Cassin, Proc. Acad. Philada., vii. p. 315, (1855.)

20. CAMPEPHAGA NIGRA, Vieillot.

Campephaga nigra, Vieill.

Le Vaill. Ois. d'Af. pl. 165.

Very similar to specimens in the museum from Southern Africa.

21. CORVUS CURVIROSTRIS, Gould.

Corvus curvirostris, Gould, Proc. Zool. Soc., London, 1836, p. 18.

Jard. & Selby, Ill. Orn. N. S. pl. 33.

A very handsome and strongly marked species.

22. LAMPROCOLIUS SPLENDIDUS, (Vieillot.)
Turdus splendidus, Vieill.
Lamprotornis chrysotis, Swains. B. of W. Af. i. p. 143, pl. 6.

23. LAMPROCOLIUS PURPUREICEPS, Verreaux.
Lamprocolius purpureiceps, Verr. Rev. et. Mag. 1851, p. 418.

24. SYCOBIUS CRISTATUS, (Vieillot.)
Malimbus cristatus, Vieill.
Tanagra malembica, Daudin, Ann. du Mus. ii. p. 148.
Vieill. Ois. Chant. pl. 42.

The adult of this species is very easily recognized, but the young is different. In some specimens there is no appearance of the crest, and the entire head and neck is of a dull brick red; the other plumage dull browish black. In one specimen, evidently young, the head above is of the same dull brownish black with a few red feathers intermixed.

25. SYCOBIUS SCUTATUS, Cassin.
Sycobius scutatus, Cassin, Proc. Acad. Philada.
Jour. Acad. Philada., Quarto, i. pl. 41.

Males only, precisely similar to those described as above cited.

The female of this species bears some resemblance to that immediately succeeding, but may at once be distinguished by its under tail coverts being scarlet.

26. SYCOBIUS NITENS, (J. E. Gray.)
Ploceus nitens, Gray, Zool. Misc. p. 7. (1842.)
Gray, Gen. of Birds, i. pl. 87, fig. 2.

One of the most beautiful species of this genus. Mr. Gray's specimen figured as above was scarcely as mature as several that are in the present collection.

27. SYCOBIUS RACHELIÆ, nobis.

Rather smaller than *S. scutatus*. General form short and rather heavy; bill stout; wing moderate, third quill longest; tail rather short. Total length about 5½ inches, wing 3¼, tail 2 inches.

Head above bright reddish orange, a paler shade of which extends on to the sides of the neck. Throat and cheeks black, which color includes the eyes. Neck before and breast bright orange red, immediately fading into bright yellow and extending on the sides further than on the middle of the breast. Entire upper parts, wings and tail and abdomen deep black, which color on the abdomen runs into a point on the middle of the lower part of the breast. Under tail coverts yellow. Under wing coverts black. Bill and feet dark.

Hab. River Muni, Western Africa. Discovered by Mr. P. B. DuChaillu.

This is a beautiful and quite peculiar species in its colors and general appearance. It is the only one in which the colors of the breast extend on the sides, as may be seen in some species of *Euplectes* (for instance in *E. melanogaster* (Lath.) Vieill. Ois. Chant. pl. 27). On the neck and breast the rich orange red is most distinct immediately next to and below the black of the throat, and rather suddenly fades into bright and clear yellow on the sides of the breast. Two specimens are in the collection.

Not wishing nor ever intending to pursue science as a cold abstraction, nor as an object of selfish ambition, I have named many birds in commemoration of my friends, and hope to do so again. For this I have the example of the greatest zoologists, and of none more conclusively than that of the great founder of modern systematic Zoology, who applied this description of names, especially to genera of plants, more extensively than any other naturalist has done in any department of Natural History.

By this token, I name the present beautiful bird after my loved and only daughter. Should her pathway in the world be pleasant, may she know also the great gratification that comes from the pursuit of Natural History; but if like her namesake of ancient days she shall go on her way weeping, may she have for her comfort the conscience, patience and moral excellence of her mother, with whatever of the good of the character of her father those who know him best may accord to him!

28. ESTRELDA ATRICAPILLA, Verreaux.
Estrelda atricapilla, Verr. Rev. et Mag. de Zool. 1841, p. 421.

29. NIGRITA CANICAPILLA, (Strickland.)
Æthiops canicapilla, Strickl. Proc. Zool. Soc., London, 1841, p. 30.
Fraser, Zool. Typ. Birds, pl. 48.

30. PASSER SWAINSONII, (Rüppell.)
Pyrgita Swainsonii, Rüpp. Faun. Abyss.
Pyrgita simplex, Swains. B. of W. Af. i. p. 208.
Rüpp. Faun. Abyss. Birds, pl. 33, fig. 2.

Not distinguishable from specimens in the Museum of the Academy labelled as coming from various localities in Southern and Eastern Africa.

31. CORYTHAIX PERSA, (Linnæus.)
Cuculus persa, Linn. Syst. Nat. i. p. 171, (1766.)
Edward's Birds, pl. 7.

Received in every collection yet sent by Mr. DuChaillu.

32. BERENICORNIS ALBOCRISTATUS, (Cassin.)
Buceros albocristatus, Cassin, Proc. Acad. Philada.
Buceros macrourus, Bonap. Cons. Av. p. 91, (1850.)
Jour. Acad. Philada Quarto, i. pl. 15.

The present collection contains the second specimen that I have ever seen of this remarkable species. This specimen is apparently not in so mature plumage as that originally described by me, and has the feathers on the cheeks behind and below the eye mixed with white and black, instead of pure white as in the former specimen. The greater wing coverts and all the quills are tipped with white.

33. BUCEROS POENSIS, Fraser.
Buceros poensis, Fraser, Proc. Zool. Soc., London, 1853.

Described by Mr. Fraser as above, from a female specimen, and apparently the same bird which was labelled as the female of *Buceros elatus*, Temm. in a collection from Western Africa received from Dr. Robt. MacDowell at this Academy some years since, as stated by me in the Proceedings of this Academy.

If this is the female of that species, it is more unlike the male than is the case in any other with which I am acquainted. A single specimen, which is labelled as a female, is in the present collection.

34. ALCEDO LEUCOGASTRA, Fraser.
Alcedo leucogastra, Fraser, Proc. Zool. Soc., London, 1841, p. 4.
Fraser, Zool. Typ. Birds, pl. 32.

35. HALCYON SENEGALENSIS, (Linnæus.)
Alcedo senegalensis, Linn. Syst. Nat. i. p. 180, (1766.)
Swains. Zool. Ill. pl. 27.

36. HALCYON BADIA, Verreaux.
Halcyon badia, Verr. Rev. et Mag. de Zool. 1851, p. 264.

Precisely similar to the specimen described by Mr. Verreaux which is in the Museum of the Academy.

37. MEROPS VARIEGATUS, Vieillot.
Merops variegatus, Vieill. Ency. Meth. p. 390.
Merops cyanipectus, Verreaux, Rev. et. Mag. de Zool. 1854, p. 269.
Le Vaill. Guepiers, pl. 7.

Received in every collection.

38. MEROPISCUS MÜLLERI, nobis.

Rather larger than *M. gularis*. Bill long, curved, culmen distinct, wing moderate, third and fourth quills longest and nearly equal; tail rather long, even or slightly rounded; feet weak.

Total length about 8 inches, wing 3½, tail 3½ inches.

Throat with a few feathers of bright scarlet. Head above and entire under parts fine blue, lighter and inclining to green in front and over the eyes. Back and wings chestnut. Tail above blue, darker than that of the under parts of the body, with the inner webs of the outer feathers black, beneath black. Auricular feathers bluish black, under wing covets pale rufous chestnut. Bill and feet dark.

Hab. Muni River, Western Africa. Discovered by Mr. P. B. DuChaillu.

One specimen only of this curious and very handsome species is in the collection. It is a true *Meropiscus*, and though but little larger than *M. gularis*, and strictly of the same form, does not resemble it in colors.

As a slight testimony to his accomplishments as a naturalist and enterprize as a scientific traveller, this handsome bird is dedicated to my friend, the Baron John William Von Müller of Würtemberg, distinguished for his Zoological Researches in North Eastern and Central Africa.

39. CYPSELUS AMBROSIACUS, (Gmelin.)
Hirundo ambrosiaca, Gm. Syst. Nat. ii. p. 1051.
Cypselus parvus, Licht. Verz. p. 58.
Temm. Pl. Col. 460, fig. 2.

40. ATTICORA NITENS, nobis.

Tail nearly square, not forked, and but slightly emarginate, the tips of the feathers slightly produced or mucronate. Bill short, rather wide at base, weak; wing long, the first quill longest with its outer edge having reversed serrations rough to the touch; tail rather long. Quills wide, primaries somewhat curved.

Total length about 4¼ inches, wing 3¾, tail 2¼ inches.

Throat fuliginous. Entire other plumage greenish black with a tinge of brown on the back and darkest on the abdomen and under tail coverts, and in the whole plumage having a green metallic lustre. Quills and tail black, edged with glossy dark green. Bill and feet dark.

Hab. Muni River, Western Africa. Discovered by Mr. P. B. DuChaillu.

I have in this collection four specimens of this species, labelled as both sexes, and can refer them to no description given in the books. This species appears to resemble *Hirundo obscura*, Temm. Cabanis' Jour. 1855, p. 355, but has no such character as "*cauda profunde furcata.*" On the contrary, the tail is quite square or truncate and but slightly emarginate.

41. APALODERMA NARINA, (Vieillot.)
Trogon narina, Vieill.
Le Vaill. Ois. d'Af. pl. 228, 229; Gould, Monogr. pl. 26.

The first instance of the occurrence of this well known species in Western Africa. One very fine specimen is in the present collection, and is precisely identical with numerous others now before me from the Cape of Good Hope.

42. ZANCLOSTOMUS FLAVIROSTRIS, Swainson.
Zanclostomus flavirostris, Sw. B. of W. Af. ii. p. 183, pl. 19.

43. DENDROBATES, Swainson.

There are in the collection, two species which I cannot at present determine. There are also specimens of one species of Woodpecker not belonging to this genus. Numerous specimens of species of this family being now in the possession of the Academy I propose at an early period to make them the object of special study.

44. NECTARINIA SUPERBA, (Vieillot.)
Certhia superba, Vieill.
Vieill. Ois. Dor. pl. 22.

Really a *superb* species, apparently not uncommon in Equatorial Africa.

45. Nectarinia cyanocephala, (Vieillot.)
Certhia cyanocephala, Vieill.
Vieill. Ois. Dor. pl. 7, 25.

46. Nectarinia Stangerii, Jardine.
Nectarinia Stangerii, Jard. Ann. Nat. Hist. x. p. 187.
Jard. & Selby, Ill. Orn. U. S. pl. 48.

47. Nectarinia chloropygia, Jardine.
Nectarinia chloropygia, Ann. Nat. Hist. x. p. 188.
Jard. & Selby, Ill. Orn. N. S. pl. 50.

48. Nectarinia obscura, Jardine.
Nectarinia obscura, Jard. Nat. Lib. Orn. xiii. p. 253, (1842.)
Jard. & Selby, Ill. Orn. N. S. pl. 51.

Two specimens in the present collection labelled as males appear to be this species. They are, however, evidently in immature plumage.

49. Peristera chalcospilos, (Wagler.)
Columba chalcospilos, Wagler.
Rüpp. Syst. Uebers. pl. 38.

50. Peristera puella, Schlegel.
Peristera puella, Schleg. Beydr. Dierk. i. p. 19, pl. 6, (1848.)

51. Peristera tympanistria, (Temminck.)
Columba tympanistria, Temm.
Le Vaill. Ois. d'Af. pl. 272; Knip. et Prev. Pigeons, ii. pl. 36.

Not to be distinguished from specimens from Southern Africa.

52. Squatarola helvetica, (Linnæus.)
Tringa helvetica, Linn. Syst. Nat. i. p. 250, (1766.)
Wilson, Am. Orn. vii. pl. 59; Gould, B. of Eur. iv. pl. 290.

Not distinguishable from the bird of the coasts of America and Europe. Specimens in the present collection are from the mouth of the Muni and Corisco island.

53. Charadrius zonatus, Swainson.
Charadrius zonatus, Sw. B. of W. Af. ii. p. 135, pl. 25.

Very similar to the European and American *C. minor*. Specimens from Corisco island.

54. Scopus umbretta, Gmelin.
Scopus umbretta, Gm. Syst. Nat. i. p. 618.
Ardea fusca, Forst. Desc. An.
Cepphus scopus, Wagler, Syst. Av. p. 146.
Buff. Pl. Enl. 796.

From the mouth of the Muni.

55. Harpiprion olivaceus, (Dubus.)
Ibis olivacea, Dubus, Mem. Acad. Brussels, 1837, p. 103.
Dubus, Esq. Orn. i. pl. 3.

A young specimen, but evidently of this species, and the first that I have ever seen. General colors as figured by the Baron Dubus, but with the feathers of the neck and breast having central large spots of dark fulvous, with which also a few of the feathers of the crest are striped longitudinally.

56. Totanus hypoleucus, (Linnæus.)
Tringa hypoleuca, Linn Syst. Nat. i. p. 250.
Gould, B. of Eur. iv. pl. 316.

From Corisco Island.

57. Calidris arenaria, (Gmelin.)
Tringa arenaria, Gm. Syst. Nat. i. p. 680.
Wilson, Am. Orn. vii. pl. 59; Gould, B. of Eur. iv. pl. 335.

From Corisco Island.

58. STREPSILAS INTERPRAS, (Linnæus.)
Tringa interpras, Linn. Syst. Nat. i. p. 148.
Wilson, Am. Orn. vii. pl. 57; Gould, B. of Eur. iv. pl. 318.
Precisely similar to specimens from the coast of New Jersey.
From Corisco Island.

59. NUMENIUS PHÆOPUS, (Linnæus.)
Scolopax phæopus, Linn. Syst. Nat. i. p. 243.
Gould, B. of Eur. iv. pl. 303.
From Corisco Bay, mouth of the Muni.

60. PODICA SENEGALENSIS, (Vieillot.)
Heliornis senegalensis, Vieill. Nouv. Dict. xiv. p. 277.
Lath. Gen. Hist. x. pl. 164; Gray, Gen. iii. pl. 172.

61. STERNA SENEGALENSIS, Swainson.
Sterna senegalensis, Swains. B. of W. Af. ii. p. 250.
Scarcely different from the European, *Sterna hirundo*. A single specimen from the island of Corisco, mouth of the Muni.

On the Crania of the Ancient Britons, with Remarks on the People themselves.

BY JOSEPH BARNARD DAVIS.

It was the distinguished and excellent Professor Samuel George Morton, who, by his industry, skill and great attainments, mainly developed what may be denominated the science of Comparative Cranioscopy, as applied to ancient and extinct races of men. And we deem it an especial honor to be permitted to address that learned body before which Morton's chief discoveries in this science were first announced—an Academy which had the surpassing advantage of numbering him among its Presidents. But in venturing thus to address the Academy of Natural Sciences of Philadelphia upon a subject congenial to those so admirably illustrated by its late President, and therefore in some measure following in his steps, it must be distinctly announced *in limine*, that it is not with any pretensions whatever to co-equal powers, or co-equal learning.

The Ancient Britons, the aboriginal people of the British Isles, are a race of whose physical characters we can learn little or nothing from classical writers, whether Greek or Roman. The very little knowledge to be acquired is only incidental, never direct—imparted as it were by accident. They were a people divided into a number of tribes, living chiefly by the chase and the products of the rivers and the sea; yet not devoid of both pastoral and agricultural habits. They are known to us mainly from presenting a serious obstacle for ages to the arms of the conquerors of the world—imperfectly subdued with much difficulty, and only held in subjection by the most consummate stratagems of the military art of the Romans. To account for their first appearance in the Islands, many ingenious and learned theories of immigration have been broached, all of which are exposed to a serious objection, independent of failing to suggest any reasonable motive for such primordial migration, viz: that they are based upon a point, instead of a broad and solid foundation—they invert the order of nature, and make use of the result and the superstructure to give the substratum which is required. They all suppose man, in his most primitive and most helpless condition, to have been endowed and furnished with appliances and arts, which are only the result of development and cultivation. And, like the similar fanciful speculations which would derive the Indian tribes of the American continent from the eastern one, are obnoxious to the objection of being gratuitous and superfluous. Their inventors can give no valid reason, based on solid ethnological ground, why the assumed migrations may not have pursued a diametrically opposite course. This being the case, we have a right to maintain, that there is a decided preponderance on either one side or the other, and an equal reason to assume for the primitive inhabitants of the British Islands an aboriginal and primordial character not inferior to that of any other race.

Like most, if not all the primitive people, they have manifested the great principle inherent in the human mind, which incessantly animates an irrepressibly longing hope and aspiration for a future life—one of those elements of man, which more than any other bears irresistible evidence, both of his inherent grandeur and superiority in the animal scale, and also, of the strict unity and identity of his race—they have manifested this noble and sacred sentiment by a scrupulous and elaborate care in preserving the dead; to whom they even furnished food, objects of adornment, weapons and companions also for the future life they anticipated beyond the tomb. Their tombs, the Cromlechs, Barrows, Cairns of the British Islands, notwithstanding the lapse of twenty, thirty or more centuries, have remained until recent times scattered over the surface of the country in various directions; and, it is evident, have been constructed with such pains and skill as to have braved all the chances and changes of revolving ages, until the arts of modern agriculture, or the inquisitive hand of man—alas! almost constantly a rude, uninstructed and ruthless hand—have unhearsed the remains they have so faithfully preserved.

These remains, which, as Sir Thomas Browne long since said, " have quietly rested under the drums and tramplings of three conquests," are capable of teaching us something of the race to which they have belonged, and of recalling some of those physical features of which it is so unfortunate the ancients left no full, faithful and permanent record, when they had the living people before them. If we might not have expected from the martial spirit of Cæsar an ethnography of the tribes who proved such stubborn obstacles to his ambition and desire of conquest, there were those among his friends, who passed over and remained with him in Britain, who had both the abilities and the opportunities to accomplish this task. The most illustrious of Roman orators, as we learn from his invaluable Epistles, writing to his brother Quintus, who was one of Cæsar's companions in Britain, and even entertained the design, urges upon him the composition of the work which we must ever lament the want of —a Poem on the geography, the natural history, the ethnography—"mores et gentes," the nations or tribes, and their manners and customs—as well as the history of the war in which the great Roman general had been engaged with them. It were in vain to lament the want of the curious information this work would have imparted. We are now mainly reduced to the teachings of the tomb, and in the language of M. L'Abbé Cochet, a learned French archæologist, " dans le silence de l'histoire, le tombe est le meilleur document que l'on puisse consulter pour connaitre la vie, les mœurs, et la religion de nos peres."

The eleven fine lithographs of the skulls of the ancient Britons, which I transmit to the Academy with this paper, have been executed from the crania themselves of the *natural size*, and with the greatest care and fidelity. They are derived from Barrows in parts of England at considerable distances from each other,—some from Yorkshire, which was inhabited by the tribe of the *Brigantes* in the time of Ptolemy, about the year 120 of the Christian era,—some from Derbyshire and Staffordshire, the seats of the *Coritani* and *Cornavii* at the same period,—one from Gloucestershire, the seat of the *Dobuni*,—and others from Wiltshire, the country of the *Atrebatii* in the days of Ptolemy. We cannot affirm that they have actually belonged to individuals of these tribes respectively, as there are many chances which might render this doubtful. Wars, whether intestine or foreign, and migrations, no doubt did their work of mutation in that early time as they have done since; and there is also the possibility, although very remote, of their having belonged to prisoners, or to guests of neighboring or remote tribes. But in the absence of all evidence to support these suppositions, we cannot err much in appropriating them to the tribes in whose country they were found. At least, there can be no question of their genuine Britannic origin and derivation. This, as we shall perceive on closer examination is impressed on every feature, and is now almost as cognizable as in the day in which they were clothed with their fleshly lineaments.

The study of skulls in general teaches us that among all races, although there is a general resemblance running through the series belonging to a given race, yet there are many minor diversities; and it is probable that among European races these diversities have a wider range than in the other great divisions of the human family. Morton was able to discern among all the numerous American races, exclusive of his hyperborean, a family resemblance. Notwithstanding this position of his, we must admit that the diversities of the cranial forms of the very numerous and diverse tribes of the American continent are both great and frequent; and an extended study would in all probability develope such resemblances in specific families as would confer upon them a distinct and proper value. Now among such specific families belonging to European races we believe it is much the same, only that the individual peculiarities in the families diverge further from the tribal type of form, and are probably more frequent. Under these circumstances, we are prepared to expect diversity of form among the crania of the ancient Britons; but it is not unreasonable also to expect that, true to the beautiful principle of nature, of an endless diversity under a comprehensive uniformity, this diversity will be restrained within limits, and be subjected to definite rules. We may therefore endeavor to distinguish what may be denominated the typical form of cranium belonging to any race of man, and then to arrange the divergent forms subordinately around this.

I. We believe *the typical form of cranium of the ancient Briton* may be regarded as represented by some of the skulls delineated in these lithographs, especially in that from the Barrow on Ballidon Moor in Derbyshire, and that from Green Gate Hill Barrow in Yorkshire, and that from Codford in Wiltshire, plates 1, 3, 4 of the 1st decade of *Crania Britannica.* They are somewhat short or *brachy-cephalic*, not ill-developed, nor remarkable for a small facial angle. The bones of the face, and especially the upper maxillaries, are upright, or *orthognathous*, but, also rather short; and they present, more than the bones of the calvarium that rugged aspect which is the characteristic of a savage or semi-civilized race. The chin is usually prominent, the external surface of the upper maxillaries depressed, the nose abrupt and short, surmounted with a frowning eminence marking the situation of the frontal sinuses. The teeth are tolerably large and usually well worn. They correspond with the rugged and frequently everted angle of the lower jaw, the spacious zygomatic arch, and the large surface, well marked out by its superior semi-circular line on the sides of the calvarium. These rough and spacious surfaces indicate power in the temporal and masseter muscles, and equally with the condition of the teeth, reveal a people of carnivorous tastes, a people whose delight was in the chase, and the luscious feasts it afforded them.

II. Of the *aberrant forms* of the ancient British skull one is remarkable for its length, and may be denominated *dolicho-cephalic.* To this form there attaches a good deal of interest, from the theories which learned men have been induced to associate with it. An example of this peculiar aberration is afforded by the cranium from the famous chambered Barrow of Uleybury in Gloucestershire, plate 5 of *Cran. Brit.* This skull is remarkable for its length and want of elevation, but it is not particularly distinguished by narrowness. Other examples of the dolicho-cephalic form of the ancient British cranium are known to the writer, but some of these are quite as much marked by their want of breadth as by their elongation. In fact, they equal in this feature the skulls of that race to which longness and narrowness of cranium are regarded as peculiarly appropriated—the negroes of Africa. It is a singular circumstance that these long skulls of ancient Britons have usually been met with in a particular species of Barrow, that which is composed of a series of chambers, arranged it may be in diverse manners—the chambered Barrow. In the anxious inquiries in which the mind is apt to indulge when prying into the almost impenetrable obscurity of a very remote past, every special circumstance fixes the attention and acquires importance. And the discoveries we have mentioned have led to the theory that these long crania have belonged to a particular precedent race of people, a people who interred their dead in a more elaborate and complex manner than the race which succeeded them; a race of people which have been distinguished by the denomination of *pre-Celtic.* In the opinion of the writer the evidence is much too incomplete for any such inference as this, were it not equally obnoxious to the objection mentioned in the early part of our remarks—that of a certain inversion in the order of sequence—by representing the complex barrow builders as preceding those who raised simple barrows, which is contrary to all experience. There are good archæological reasons, it is true, for believing that the chambered Barrows of Great Britain belong to what is denominated "the stone period," and that they are very early, but that the builders of them can with any good confidence be referred to the earliest portion of the stone period, seems to us to want probability as much as it wants conclusive evidence for its support. The circumstance that these long skulls have usually been found in chambered Barrows may be a mere contingency, little more than accidental, and further inquiry may not improbably prove this. For it must not be supposed that the skulls of ancient Britons are numerous, or have often been saved from the wreck of their primeval sepulchres, and especially that many of the dolicho-cephalic crania from Barrows of a chambered character have been met with. Strangers to the facts of the case might have supposed both these things to be true, but indeed they are far from being so. Specimens of crania of ancient Britons are rare objects, those in anything like a perfect state, very rare, and all specimens are becoming rarer every day. British Barrows have been undergoing destruction for ages, having been the prey of idle curiosity or cupidity always, and the skulls of those once so sacredly enhearsed in them by the tender hands of mourning friends and relations have always been especially exposed to destruction, possibly from the feeling of ignorant terror, which is so apt to diverge into ferocity and destructiveness. But whatever be the cause, the fact receives daily confirmation that when ancient tombs are accidently opened by uninstructed and unscientific persons, the relics are plundered and the fragile bony remains are at once violently broken into fragments. Therefore objects such as those with which our attention is occupied are not numerous, and have not received that notice to which they are entitled. But to return to the dolicho-cephalic crania of the chambered Barrows, supposed to indicate a "pre-Celtic race," and upon which has chiefly been built the mighty doctrine—certainly mighty for such a meagre foundation—that an entire race of a distinct people, in some very remote period of antiquity, migrated to the shores of the British islands and invaded them, established themselves therein and dwelt there for ages. In some cases the evidence for this vast hypothesis—countenanced by ethnologists of the greatest learning, men well meriting the high reputation they enjoy—may be explained in a much simpler way. In a Derbyshire Barrow, called Long Lowe, three crania of this type occurred, which we are strongly inclined to regard as having a family relation, and as exhibiting a mere family peculiarity. One a long flat skull of beautiful outline, is that of a man, aged about 40 years; another, that of a woman somewhat older; and the third, of a girl under 10 years of age, who may be concluded to have been the daughter of the two above named parents. Another of the Derbyshire chambered Barrows, which has been productive of dolicho-cephalic crania, is situated upon "Five Wells Hill," and is unquestionably of vast antiquity; but we possess a skull from among the lowest interments in this Barrow, which is of brachy-cephalic form, and the existence of which, in the position in which it was found, we cannot help thinking shakes the theory of the dolicho-cephalic pre-Celtic race to its very foundations. In fine, we may remark, that we see no sufficient ground for admitting a favorite hypothesis of the present day, that another race of people preceded the ancient Britons; which kind of doctrine has not been confined to the British isles, but took its rise in Denmark and Norway, where it has received its chief attention and illustration, although it should be mentioned, that the order of precedency has been inverted there, and the brachy-cephalic, not the dolicho-cephalic people, have been supposed to have come first.

III. The next important aberrant form is one that is remarkable for horizontal expansion, and which we have denominated *platy-cephalic.* The cranium is not deficient in longitude, but does not impress the eye by its length on account of being equally expanded in breadth. It forms a skull of considerable capacity, and is well exhibited in the cranium from the Western Hill Barrow, No. 6, although not very apparent in the lithograph of the profile.

IV. These are the chief aberrant forms. It is probable there may be another distinguished by the extreme elevation of the vertex, to which the name of *acro-cephalic* is applicable. It is not unlikely that the skull from the Barrow at Kennet, near the famous avenue and megalithic circle of Avebury in Wiltshire, in the lithograph No. 9, is an instance. Its extraordinary facial form we fear is partly to be attributed to some distortion arising from an imperfect restoration from the fragments to which it was reduced when found.

From the remarks now made, it will be seen that our investigations are far from giving countenance to a doctrine, announced by a very respectable authority, that in primeval times the skulls of mankind were much more alike than in the present day, that they were, as it may be said, "stereotyped" in one mould. So far from this we believe it may be proved in this field, as in all others, that diversity within certain definite limits has been the beautiful law of nature from the first.

In *stature* we have reason to know the ancient Britons varied a good deal. A famous skeleton of a British chieftain, discovered in a coffin made out of the trunk of a tree, in 1834, at Gristhorpe, near Scarborough, and now preserved in the Museum of that town, measured 6 feet 2 inches in height. Another skeleton, also from the North Riding of Yorkshire, in the rich Museum of British antiquities of Mr. Bateman, of Youlgrave, in Derbyshire, measures only 5 feet 3 inches in height. Whilst that of a British woman in the same Museum, from a Derbyshire Barrow called "Wagon Lowe," near Buxton, measures 5 feet 5½ inches in height.

No one has labored so earnestly, so diligently, and with so much pains and care as the late Professor Morton to bring the test of the measurement of crania of various races to the elucidation of different obscure problems of anthropological science. It becomes us, therefore, to explain what little information we have been able to collect upon this subject. At present it is but little, still in the course of another year or two we trust to make it much more complete. In bringing our present imperfect evidence before the Academy, we hope to be excused for remarking, that we are not inclined to expect quite so much or quite such conclusive information from the determination of the capacities of crania as Morton did. And we are satisfied that a much more extended observation, upon a more defined basis than he adopted, is requisite to develope data of a reliable character as to the relative capacities of different series of skulls. One great source of error will require to be eliminated, arising from taking any series of crania above a certain age, provided they are not idiots, *indiscriminately, and without regard to the relative numbers of the different sexes.* For instance, from the remarkable and well known difference in the size of the skulls of men and of women of the same race, if we have an equal number of crania of two races to compare together, the one series containing a greater number of those of women than the other, the whole calculation will be vitiated. But without dwelling further upon these questions at present, we will give, in a tabular form, the internal capacities of a few ancient British crania, merely explaining that they are all those of men, and are taken with dry sand by weight. In order, however, to render them as far as possible available for comparison with Morton's great table laid before the Academy in the year 1849, and published in the "Proceedings" for that year, we have converted them into the denomination of cubic inches employed by him, and arranged the figures exactly as he did.

Number of Ancient British skulls of men 11.

Largest internal capacity	110·15	cubic inches.
Smallest do.	87·7	"
Mean do.	98·6	"

These results do not admit a strict comparison with the table of Morton, on the ground already stated, that the British skulls have belonged to men exclusively. Still we shall be safe in comparing Morton's largest internal capacity with ours of 110·15 cubic inches, for, no doubt, both were derived from the skulls of men. The largest internal capacity in his whole table, 114 cubic inches, was found in the skull of a Dutchman, who was born at Utrecht and died in Java. In fact, it is the largest cranium in the grand Mortonian collection. A skull of an ancient Briton found in Green Lowe, in Derbyshire, which has probably belonged to a Coritanian, has a capacity of 110·15 cubic inches, or within 4 cubic inches of the same size. The largest of Morton's *English* skulls had an internal capacity of 106 cubic inches, or 5·15 cubic inches less than the Green Lowe Barrow cranium. And the largest of Morton's *Anglo-American* skulls was no less than 13 cubic inches *less* than this from the Green Lowe Barrow in internal capacity. From this small and imperfect amount of evidence we appear to be justified in concluding that the crania of the Ancient Britons were by no means deficient in internal or cerebral capacity. Much more numerous observations are, however, required before any data can be deduced on this subject, of a nature as satisfactory as the evidence will admit.

It may not be impertinent to mention here, parenthetically, that the skull of largest internal capacity we have met with, is an ancient *Irish* calvarium, found in 1855 at a depth of 10 feet in Suffolk street in Dublin; of course the term ancient in this place must be taken conditionally, as applying probably to medieval and not to primeval times. The internal capacity of this calvarium is not less than 123·5 cubic inches, or very nearly 10 cubic inches more than that of the Dutchman of noble birth in the Mortonian Collection.

An assertion is frequently made by the advocates of the progressive development and improvement of all races, which it may not be improper to allude to here. They maintain that the influence of what is denominated civilization is able to develope the brain of any race materially in the course of ages, and consequently its osseous case. This doctrine of development is distinct from that which affirms that different races of men are distinguished by crania of different capacities; on the contrary, it supposes that all races may, by a process of civilization and development attain to a large capacity of the skull and corresponding great brain. As far as the observations of ancient British crania we have previously mentioned, they do not give any countenance to this theory of development. And, we may add, that our further observations, although neither so numerous nor so extensive as they ought to be, and as we hope to make them, on ancient Roman and on Anglo-Saxon skulls, are equally far from rendering this doctrine support. Of the hitherto few skulls already engraved in the "Crania Britannica," we may refer to one ancient Roman skull derived from the city of York, the Roman "Eburacum." The internal capacity of this cranium amounts to no less than 104·7 cubic inches. Another fine cranium of an Anglo-Saxon derived from an ancient cemetery in Cambridgeshire, has an internal capacity of no less than 109·6 cubic inches. As far, therefore, as these data go, they give no countenance to the assumption that, as races proceed in their advancement from the state of barbarism upwards, their brains gradually expand. With the capability of all races to make this advance, another assumption that is usually associated with the former, we have nothing to do at present.

It would be quite unnecessary to remark upon the permanency of cranial forms before an Academy presided over by Morton, any more than to dwell upon primitive diversity, which has already been alluded to. But the series of skulls to which the attention of the Academy has been solicited, afford additional evidence which bears upon these points. And an attentive consideration of ancient skulls will develope a series of remarkable diversities.

Professor Morton, in his elaborate and well-reasoned work, "Crania Ægyptica," which stands in so near a relationship to this Academy, has pointed out in the most masterly manner the characteristics of the cranium of the ancient Egyptians. That delicate cranial form was proper to them, whom Morton ultimately concluded to be indigenous to the valley of the Nile, and strictly aborignes. It was we, believe, deserving of the epithet *idiogeneous*, or especially proper to the race, and had a relation to them alone, and to no other race, ancient or modern. There is a peculiarity in the generality of the mummified heads of the ancient Egyptians, well seen in the skulls also, which Morton has not expressly mentioned, but which always strikes us at the first glance. Like all ocular impressions, it is more readily perceived than described. But it arises from the particular outlines by which the profile of the cranium is circumscribed. The *base line*, the most essential feature, runs along the whole of the base of the lower jaw from the tip of the pointed chin, and passing thence directly to and along all the external centre of the occipital bone as far as its tuberosity. This base line may be seen to be totally at variance with the line which bounds the ancient British skull in the same direction from the profiles before the Academy. We believe it is only found in crania of an African lineage, and in none so level and uniform as in those of the ancient Egyptians. If we let down upon this base a facial line, which shall run along the forehead, and, with only a slight deviation, till it runs also along the fore part of the pointed chin, we thus bound the cranium in these two directions by right lines, which meet at a more acute angle than in any other race. They are strictly Egyptian in their character, for in the negro races this facial line has no proper commencement from the receding forehead, and is seriously interrupted by the prognathous jaws and teeth. It is the form we have thus endeavored to analyse and describe which imparts to the ancient Egyptian skull its delicate and elegant character.

How diverse is the robust erect form of the ancient British skull, marked by great depressions of the facial surface, and instead of the graceful long nasal bones, abrupt and short ones, standing immediately below the frowning frontal protuberance, with the intervening hiatus. All which features impress the mind with feelings of a much less complacent kind, and inevitably lead to the conviction that we have before us the representation of a bold uncivilized nature —full of power, and not deficient in capacity, but quite incapable of refinement and the graces of cultivation. These Egyptian and British cranial forms are strikingly at variance, although probably owning an equal antiquity—indeed we see no good reason whatever, why these different people may not have been primeval contemporaries ; and yet the marks of diversity they present are as clear and sharp as any that can be adduced among any modern people. They point, therefore, in an irresistible manner to a primordial difference.

The ancient Britons themselves, it is probable, may be regarded as an *idiogeneous race*, *i. e.*, taken as a whole proper in their characters, physical and moral, and distinct from all others. Whether the ancient Gauls resembled them in all particulars, seems very doubtful. They admit of comparison with other people of ancient and modern times, but we are inclined to think, were we able to realize a faithful and complete picture of them, it would present irreconcilable discrepancies with other races. They had many marks of agreement with the Indian Tribes of North America. They dwelt in a temperate region, where animal and vegetable life was abundant, and devoted themselves to the chase, in which they were assisted by the aborignal hounds of Britain. Claudian, in his allusion to these dogs, represents them as capable of overcoming bulls.

> . . . . . hæ pedibus celeres: hæ nare sagaces.
> Hirsutæque fremunt Cressæ, tenuesque Lacænæ,
> Magnaque taurorum fracturæ colla Britannæ.

The Britons were equally possessed of the small indigenous horse of the country. They also found in the native forests animals of chase of equal, nay greater, magnitude than that of the Buffalo of the prairie, and, we have reason to think, were as successful as the Indians of the northern part of this continent in their pursuit of them. A Barrow opened in the parish of Cherhill near Calne in Wiltshire, in 1833, revealed a number of bones, and among them were the enormous horns of an ox, the *horn-cores* of which had a circumference of 15½ inches at the root, and in their widest expansion, a diameter of 33 inches. Besides this collossal ox they had other bovine cattle, and deer, of the hunting of which with hounds the Romano-British pottery affords numerous pictures, as it seems to have been a favorite subject with the artists for the Samian ware. It appears at first view an astonishing circumstance that the weapons of chase, the arms and implements of the ancient Britons should be almost identical with those of the ancient race of Indians of this continent. The same spear-heads, arrow-heads, axes, &c., of the earlier North American Indians are of the same forms as those of the ancient Britains, and they differ only in material. Instead of the constantly occurring flint of the Britons, the North American tribes have used flint more sparingly, and a series of other hard and beautiful stones, such as chalcedony, jasper, crystal, &c., for the production of these weapons. To the kindness of Mr. Franklin Peale, a highly esteemed Member of this Academy, the writer is indebted for a very fine collection of the stone implements and weapons of the North American Indians, which excited surprise to find them so closely approximating to those of the ancient Britons. The truth is the resemblance now alluded to seems to be confined by no limits of latitude or longitude. The stone weapons and implements from Japan in Siebold's Museum at Leyden we found to be scarcely distinguishable from the British ; and we have also seen flint spear-heads from New Zealand, not only closely approximating the ancient British ones, but actually fashioned with the same number of strokes, given in the self same direction.

In accordance with the prevailing views on the origin and distribution of man, this extraordinary similarity in the stone weapons and other utensils of such widely distributed races has been ascribed to the distribution of the makers, and the communication of the art. An hypothesis, we believe, out of the limits of possibility by any natural means of diffusion. Whereas, the simple circumstance that these weapons are all produced by beings of similar powers and capacities, having similar wants, and similar objects wherewith to satisfy those wants, is an adequate explanation of the phenomenon ; and according to all right principles of philosophy should be admitted at once.

That the ancient Britons adopted the flexed or crouching posture in the interment of the dead, just as the Indian races of America, we have abundant evidence. This again is a practice generally diffused among all uncivilized races, the aborigines of Australia adopting it, as well as others. There need be no question also, that it is to be referred to some common cause operating on all alike ; very probably to a desire to imitate that posture which is both easy and agreeable to them, in the hut or around the fire, and associated in their minds with the most pleasing recollections of life ; therefore fittest in which to renew life, and to begin again the social intercourse and delights of another world beyond the tomb. For it should never be forgotten that savages, as we call them, are not brutes, but richly endowed with all the sentiments of the human mind, and animated by its highest aspirations.

How far the ancient Britons advanced in that general development which we call civilization, it is difficult to ascertain. That the more southern tribes, especially, received from the Phœnician traders, implements and weapons of bronze, and learned the art of manufacturing such themselves, is now pretty satisfactorily determined ; although it is very questionable whether these superseded the earlier stone ones wholly anywhere, but especially in the remote districts of the country. Their fate was by a succession of imperial armies to be kept in check, to be subjected to a succession of conquests, and ultimately to be in large part reduced to slavery, whether in their native regions, or in Italy and in the other dependencies of the empire. Those who can lay claim by descent to the nearest relation to the aborigines of the British Islands are still a peculiar people, marked in every feature of their characters by traits which distinguish them from the races of other blood with whom they have been for so many ages in contact. Thus proving that the lineaments of nature cannot be effaced by all the chances and changes of time.

We have now gone over the subject proposed to be discussed—perhaps in a somewhat too long and discursive manner, with a view of rendering it more easy to be understood by those to whom it is probably not very familiar—as far as it seems desirable at the present time. And it only remains for the writer to express his appreciation of the mark of honor conferred upon him by this learned Academy in allowing him to address them, and more especially in permitting him to do so in the character of a Corresponding Member. However inadequate to make a due return for such a distinction, it will always be his pleasure and his ambition to place his poor attainments at the service of the Academy.

Notice of a collection of Reptiles from the Gaboon country, West Africa, recently presented to the Academy of Natural Sciences of Philadelphia, by Dr. Henry A. Ford.

BY EDWARD HALLOWELL, M. D.

Ord. SAURII.

Fam. *GECKONES.*

HEMIDACTYLUS ANGULATUS, Hallowell. Proc. Acad. N. S., vol. vi. p. 63. Six specimens.

Fam. *LACERTIANS.*

(Sub-fam. Autosaures cælodontes, D. & B.)

TACHYDROMUS FORDII, nob.

Char. A small plate between the fronto-nasal; back with six complete carinæ and two incomplete; abdomen strongly carinated; femoral pores oblong, oval, numerous; color bronze above with metallic reflections, greenish below.

Description. Nostril in a single plate, the naso-rostral; immediately behind it a small plate, the naso-frenal; two frenals, an anterior and posterior, the latter much the larger of the two ; one freno-orbitar on the right side, two on the left; that on the right oblong, quadrilateral; rostral broad, pentangular, in contact with the naso-rostral; internasal large, in contact posteriorly with the fronto-nasal and the small intermediate plate between them; laterally with the naso-rostral and the first frenal; the frontal plate is long, hexagonal, slightly excavated at its sides; the supra-orbitar consists of two plates as in Lacerta; there are two fronto-parietals, two large parietals, an inter-parietal somewhat urceolate in shape, and a small occipital; six plates margin the upper jaw, the fifth, which is beneath the eye, by far the largest; four plates on each side of the jaw beneath the infra-labials, the three first quadrangular, the last less distinctly so, but much larger than the others ; auricular openings oval; no palatine teeth ; posterior maxillary teeth tricuspid, the anterior conical; tongue slender, bifid in front, chevronée ; body slender, covered with large hexagonal plates upon the back, each with a carina running along the middle, constituting six longitudinal complete rows ; besides these there are two others, which terminate about half way down the body. Upon the abdomen six rows of plates strongly carinated; flanks covered with small plates; extremities strongly carinated; fourth finger and toe the longest ; from 11 to 13 *oblong* femoral pores on each side ; tail very long, verticillate, strongly carinated both above and below. A large scale in front of the anus with two small ones externally.

Coloration. Head black above; sides bluish, body bronze with metallic reflections ; tail and extremities bronze above ; throat, abdomen, under part of extremities and tail greenish, mingled with yellow.

Dimensions. Length of head 6 lines ; greatest breadth 3 ; length of neck and body to vent 1 inch 5 lines ; tail 2 inch 11 lines; (mutilated) of arm 3; of fore-arm 3 ; of head to extremity of longest finger 4 lines, of thigh 4 lines ; of leg 4; of sole to extremity of longest toe 6.

Habitat. Gaboon contry, W. Africa, one specimen in Mus. Acad. presented by Dr. Henry A. Ford.

Gen. Remarks. This is the first time that the genus Tachydromus has been recognized to exist on the African continent, sexlineatus being found in China, Cochin China and Java; and Japonicus in Japan. This genus is also found in the Loo Choo islands. The African genus differs in no respect from the Asiatic, except in the presence of the small plate imbedded between the inter-nasal and frontal and the two fronto-nasals.

Fam. *CHALCIDIANS* or *CYCLOSAURIANS*.

(Sub-fam. Ptychopleuri.)

There are two specimens of Gerrhosaurus in the collection of Dr. Ford, one much smaller than the other and probably the young. The larger one resembles in its coloration Gerrhosaurus Bibronii, of S. Africa, but the measurements differ both from those of that species and of typicus.

	Inches.	*Lines.*
Length from nose to base of tail	3	6
Of tail	7	9
From nose to meatus externus		9
From nose to base of anterior extremities	1	4
Distance between fore and hinder extremities	2	

These dimensions more nearly correspond with those of flavigularis, but in that there are *ten* rows of ventral scutes.

G. validus is a much larger species, and sepiformis and subtessellatus do not in the least resemble it, (vide Smith, Illustrations of the Zoology of S. Africa.) We therefore consider these two specimens as belonging to a new and undescribed species, with the following characters:—

GERRHOSAURUS NIGRO-LINEATUS.

Char. Eight rows of ventral scutes; six superior labials; body slender; tail long, two yellowish vittæ, one on each side of the back, commencing at the occiput and lost upon the tail; within each vitta a black band running the whole length of the back; the interspace marked with black spots assuming more or less the form of longitudinal lines well marked upon the tail; flanks, in the young white spotted, under parts yellowish.

Description. The body is slender, covered above and upon the sides with twenty-five longitudinal rows of carinated scales; the interspace between these and the ventral scutes occupied with six rows of granulations; tail long and tapering, cyclo-tetragonal at base; the rostral plate presents an acute angle above, and articulates on either side with the first labial and the naso-rostral; the nostril opens between three plates, the naso-rostral, the naso-frenal and the first labial; the naso-rostral are well developed, in contact, with a convex anterior margin, the internal quite short, the posterior concave, where they articulate with the inter-nasal; the naso-frenal are in contact inferiorly with the first supra-labial, above with the inter-nasal; the inter-nasal is a large plate, more extended laterally than longitudinally, its inferior and lateral margin in contact with the first frenal; the fronto-nasals are two in number and in contact; the frontal is hexagonal, longer than broad, more narrow posteriorly, its lateral margins excavated; there are two fronto-parietals, a little larger than the fronto-nasals, and like them pentagonal; there are two large parietals, with a small inter-parietal, broader anteriorly; the second frenal is much larger than the first; there are two small freno-orbitars, the first longer than the second; there are four supra-orbitars, with a longitudinal row of as many plates beneath them, and there are six supra-labials; the posterior geneials are considerably larger than the anterior; the mental is broader than long; there are eight longitudinal rows of quadrangular ventral scutes, more or less striated, and fourteen anal pores on each side; the preanal scales are five in number, the lateral ones the most developed; scales upon outer surface of thighs, legs and forearms strongly carinated; there are thirteen transverse rows of scales between the occiput and the anterior extremity; the total number between the occiput and the posterior extremity fifty-one; one hundred and eleven verticillæ upon the tail; auricular opening triangular, with a large scale in front; eight scales upon right temple, nine on left, in three rows, the posterior of the middle row the largest.

Coloration. Head olive colored above, spotted with black; two yellow stripes, one on each side of the back commencing at the occiput, and lost nearly midway upon the tail, bordered with a band of black internally; interspace olive, black spotted, having the appearance of lines upon the tail; extremities olive colored above, posterior part of thighs yellow spotted; abdomen cœrulean blue; the remainder of the under surface yellowish. *Young* white spotted upon the sides upon a bluish ground, and a double row of white spots along the back between the black colored bands; sides of tail white or yellow spotted.

Dimensions. Length of head 10 lines; greatest breadth 6; of head and body to vent 2 inch. 10 lines. Total length including tail 11 inch. 5 lines.

Habitat. Gaboon. Two specimens, adult and young.

(Sub-fam. Cyclosaures glyptodermes, D. & B.)

PHRACTOGONUS GALEATUS, nob.

Proceed. Acad. N. S., vol. vi. p. 62. The length of this specimen is 1 ft. 2½ inches; of tail 1 inch 4 lines. A very singular looking animal. The contrast between the narrow mosaic looking quadrangular scutes upon the back, and the two longitudinal rows of broader ones is quite striking; the tail is short and rounded at its posterior extremity, which is protected by a circular mammelonated shield. The figure of the plate in the wood-cut of the nostrils in the volume of the Proceedings referred to, does not appear to be accurate, this plate being more extended longitudinally, reaching to the extreme end of the rostral, where it is quite narrow terminating almost in a point. The single lateral pore on each side of the preanal scutes is very distinct and is no doubt a constant character. This species appears to be allied to the Cephalopeltis Cuvierii of Müller, which has two plates upon the top of the head, (Zeitschrift fur Physiologie, von F. Tiedemann, G. R. & L. C. Treviranus, Vierter Band. Erstes Heft. 1831, Taf. xxii, fig. 5, *a*, *b*, *c*. Dr. Smith in speaking of Monopeltis capensis observes, that although I have put forward this species as a type of the group, I doubt if its more extended observation will justify the proceeding. It may prove to be only a very aberrant species of Lepidosternon, and if so Cephalopeltis Cuvieri, Müller, will be a species of the same group, only a degree less removed from the typical form. The most marked difference between the species in question and Lepidosternon macrocephalum, Wagl., consists in the covering of the head; in the latter it is formed of many plates, in Cephalopeltis of two only, and in Monopeltis of one. (Illustrations of S. African Zoology, Reptiles, pl. xvii.)

Fam. *SCINCOIDIANS.*

EUPREPES BLANDINGII, nob.

Proc. Acad. N. S., vol. ii. p. 58. Six specimens, (four adult,) (one immature,) (one quite young.)

In a specimen from Liberia, the white stripe extends about half way along the side of the body, but it is more extended on the opposite side, and in all the specimens from the Gaboon there are two white vittæ on each side, the lower one commencing in front of the eye and terminating at the posterior extremity; the upper one beginning at the occiput and reaching as far as the root of the tail, the lower band the broader of the two; four narrow black lines along the back, two on each side, becoming lost upon the root of the tail where they assume more the form of spots; the row of white spots passing along the side of the neck and body as far as the extremity of the tail mentioned in the former description, is no doubt identical with the upper lateral vitta; under surface immaculate. I do not observe that the inter-parietal is larger than either of the fronto-parietals in any of the specimens; in the one from Liberia it is longer. In all the Gaboon specimens the fronto-nasal are separate; in the one from Liberia they are almost in contact.

EUPREPES FRENATUS, nob.

Sp. Char. Fronto-nasals in contact; frenals remarkable for their great development, especially the second frenal; scales upon back broader than in Blandingii; color olive above, black spotted without any distinct dorsal or lateral vittæ; abdomen greenish with a tinge of yellow, immaculate; the green much more marked upon the sides; 33 rows of scales, tricarinate upon back and sides; total length 5 inch. 4 lines; from extremity of snout to anterior extremity 1 inch; between anterior and posterior extremities 1 inch 4 lines; of tail 3 inches; (renewed) of anterior extremity to extremity of longest finger 10 lines; of posterior to extremity of longest toe 1 inch 1 line.

Habitat. Liberia. One specimen presented by Dr. William Blanding, perhaps a variety of Blandingii.

EUPREPES ALBILABRIS, nob.

Char. Supero-nasals not contiguous, inter-nasal much broader than long, fronto-nasals in contact, more extended laterally than longitudinally; fronto-parietal very narrow anteriorly; scales 3-keeled; color olive, black spotted, a black irregular band passing from behind the eye along the sides, margined inferiorly with white; upper lip white; under parts bluish mingled with green upon the abdomen; chin yellowish.

Description. This specimen is much smaller than any of those of Blandingii, and differs from them all, even the young, in a marked manner, both in the shape of the cephalic plates and in the coloration. The rostral plate presents nothing remarkable, the supero-nasals are narrow, situated obliquely, a short distance apart; the inter-nasal is hexagonal, much broader than long, with an obtuse angle posteriorly, its lateral margins quite short; the fronto-nasal are closely in contact (separate in Blandingii), and are shorter and more extended transversely than in the latter species; the frontal is quite narrow posteriorly, presenting an obtuse angle in front; the fronto-parietal differ much in appearance from those of Blandingii, their anterior extremities being very narrow and their lateral margin longer; the inter-parietal is quite slender posteriorly, with a moderately acute angle posteriorly; there are eight supra-labials, the sixth long and quadrangular (fifth in Blandingii), and situated immediately beneath the eye; twelve transverse rows upon the back counting from one white lateral margin to that on the opposite side.

Coloration. Bronze or olive above, with irregular black spots; a black band from posterior margin of orbit, broad and well defined upon temples, more narrow upon sides where it appears to be lost near the middle, with an irregular margin superiorly, bordered with white inferiorly; upper lips white; under parts bluish mingled with green upon the abdomen; chin with a tinge of orange.

Dimensions. Length of head 9 lines; greatest breadth 3; length from head to vent 13½ lines; between anterior and posterior extremities 8½; from snout to anterior extremity 6½; arm 2 lines; forearm 2; palm to tip of longest finger 3; of thigh 2½; of leg 2; of sole to extremity of longest finger, 4¼ lines, (tail mutilated.)

Habitat. Gaboon. One individual presented by Ford.

A single specimen of a Scincoid described in Vol. VI. of the Proceedings of the Academy, p. 64, under the name Acontias elegans, but much larger, and which evidently belongs to a genus distinct from Acontias. This specimen measures 8 inches and 8 lines in extent, the tail 2 inches 10 lines, circumference 1 inch 3 lines. There are twenty-two transverse rows of scales, and one hundred and seventy-three longitudinal, including fifty-six upon the tail; there are no eyelids, but the eye may be distinguished situated near the middle of a scale at its anterior margin. The Typhline of Cuvier, from the Cape of Good Hope, the only species of Typhline described by Duméril and Bibron and by Mr. Gray, is represented by the former to be without other cephalic plates than that which encloses the whole face, as in a sort of case, (etui.) Mr. Gray, however, mentions an internasal, a frontal, an interparietal and two parietals, but in both descriptions the preanal scale is represented as single.

The scales upon the head, as given by Mr. Gray, are very different from those of the genus under consideration, the characters of which approach nearest perhaps to those of Feylinia, Gray, Cat. Lizards of British Museum, p. 129, in which the preanal scales are numerous. Feylinia is characterized as having a moderate rostral, no eyes, with scales in front of the vent like those of the belly, and a tapering tail, a description which does not represent our animal. The scales upon the back appear to be somewhat larger than those upon the sides; those upon the abdomen and under part of tail are very finely striated, upon the back also, but the striations are less distinct.

Should no generic name have been previously given to this Scincoid, we would propose that of *Sphenorhina.*

Sphenorhina elegans, nob.

Syn. *Acontias elegans,* Hallowell, Proceed. A. N. S. vol. vi., p. 616.

Char. Head rather small, depressed; snout enclosed in a single scale; nostrils lateral, with a semicircular slit reaching to the posterior margin of the rostral; three large plates upon the top of the head in a longitudinal line; the first, which is heptagonal, situated immediately behind two small plates posterior to the rostral; the second regularly hexagonal; the third presenting three distinct margins in front, the posterior margin rounded; eyes concealed by a scale, but quite visible; body cylindrical, somewhat depressed, covered with twenty-two transverse and one hundred and seventy-three longitudinal rows of smooth scales, including fifty-six upon the tail; the latter of moderate length, of nearly equal thickness throughout, except at the posterior extremity, where it is conical; four scales in front of the anus, smaller than those which cover the rest of the body. Total length 9 inches 7 lines; tail 2¾ inches; circumference 13 lines.

Habitat. Gaboon. Two specimens in Mus. Acad. N. S. presented by Dr. H. Ford.

Order OPHIDII.

Fam. *SYNCRATERIANS.* (Innocui.)

Leptophis smaragdinus, Duméril et Bibron.

Syn. *Dendrophis smaragdina,* Boie. MS. Schlegel, Essai sur la Physiognomie des Serpens, La Haye, 1837, p. 237, Id. Traill's Translation, p. 156, 1843.

Ab. scut. 158; a double preanal; sub-caud. 135, in Duméril and Bibron's specimen 154; 15 rows of carinated scales; sides of abdomen very angular. Total length 2 feet 6 lines; of tail 9 inches 4 lines.

One specimen, Gaboon; presented by Dr. H. A Ford.

Gen. Remarks. Dendrophis Chenonii, Reinhardt, appears to be a different serpent; the anterior frontals in the figure of that species (Reinhardt, nye Slangenarter, fig. 13,)* are quite small; in L. smaragdinus their internal margin is much larger than that of the posterior, the reverse is the case in D. Chenonii. L. smaragdinus is now one of the best determined species first described in print, and very accurately, by Prof. Schlegel.

Among the specimens sent by Dr. Ford is an arboricole serpent, having a general resemblance to Leptophis smaragdinus, but which, on a careful examination, differs so much in its characters from those of Leptophis, that we do not hesitate to make it a distinct genus, and for the following reasons: The head is more robust and not so long, the anterior frontals are smaller comparatively, the vertical is shorter, as are also the occipitals; indeed, all the plates upon the top of the head, although having a general resemblance, differ in fact from the corresponding plates of smaragdinus; the nostril, instead of being between two nasal plates, (the naso-rostral and naso-frenal,) is situated between the naso-rostral and the frenal, which, however, may be accidental; the frenal plate is considerably less narrow; the eyes, instead of being oval, as in smaragdinus, are round or subround, and much more prominent; the temporal plates are five in number, in two longitudinal rows, three in the inferior and two above; in smaragdinus there are four, two below and two above; in another, younger specimen, four on one side, three on the other, but differently arranged; the number of superior labials is the same in each, viz., nine, the fifth and sixth immediately beneath the eye; but the shape of these plates differs in the two animals, no two being alike; the posterior and superior angle of the sixth in smaragdinus is much more prolonged upward and backward, and the seventh is much larger; the middle labial and the accessory labials differ in form, but the difference most to be remarked is between the posterior geneials, which in smaragdinus are very long and comparatively slender; the scales in the one snake are long, narrow, and strongly carinated, in the other perfectly smooth, much less narrow and quadrangular, and there is a difference of three and a half inches in the length of the tail. It may be interesting to compare this serpent with Herpetodryas æstivus and Dryophylax viridissimus, two slender green serpents, the one from Surinam, the other from the United States. Herpetodryas æstivus and Chlorophis heterodermus are of nearly the same length, there being a difference of about 7 lines; but the difference between the tails is greater, that of æstivus being, in the specimen examined, 1 inch 8½ lines longer; but how marked is the difference in the shape of the frontal plate; the nostrils in Herpetodryas open in a single plate, and although in both there are but one preocular and two postoculars, they are altogether different in form; in the one the eye rests upon the fifth and sixth supra-labials, in the other (Herpetodryas) upon the fourth and fifth. The arrangement and number of the temporal plates is different; in Dryophylax, which is a much stouter and longer serpent, the frontal plate differs from either of the others, the prefrontals pass down upon the side of the head as far as the supra-labials, the pre- and postoculars, although the same in number, still differ in shape, the position of the nostril is different, being between two plates, the eye rests on the fourth and fifth supra-labial plates, and the size of the eye differs, being smallest in Herpetodryas, largest in Chlorophis. If we compare the supra-labials in the three we shall find them each of a peculiar type; in Dryophylax the sixth and seventh being remarkable for their large size. The scales upon the body are also different. If we examine the teeth comparatively, we shall find that in Chlorophis the maxillaries, which are smooth, present a marked curvature anteriorly, the points inclining backward, the three posterior longer than the other, the two last more especially, which are also much more robust; neither of the posterior teeth appear to be grooved. In Herpetodryas the teeth are smooth and resemble each other, (Aglyphodontes isodontiens, D. and B.) In Dryophylax the posterior maxillary teeth are longer and channelled, (Opistoglyphe dipsadien, D. and B.) Dryophylax is a South American genus, exclusively, so far as is known, but Herpetodryas, according to Duméril and Bibron, exists not only in America, but in Madagascar and the Isle of France. The following are the generic characters of Chlorophis:

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* Beskrivelse Af Nogle nye Slangenarter ved J. Th. Reinhardt. Kjobenhavn. Trykt I. Bianco Lunos Bogtrykkeri. 1843.

Maxillary teeth recurved, the posterior ones less than the anterior, the three last larger than the others, the two hinder ones especially, which are not channelled; nostrils between anterior nasal, and frenal; frenal remarkable for its large size; one antocular, two postoculars; nine superior labials, the eye resting on the 5th and 6th, and a very small part of the fourth; three anterior supra-labials small, the three posterior large; rostral rather high; two internasals and two prefrontals, vertical, pentagonal, much broader anteriorly, longer than broad, excavated laterally, presenting an acute angle behind; occipitals pentagonal, well developed; supra-oculars not projecting; eyes round and quite prominent; scales smooth, in 15 rows, quadrangular, about twice as long as broad anteriorly, broader posteriorly, the inferior row the largest; a single preanal scute; tail slender and tapering to a point, of moderate length, not half the length of neck and body.

CHLOROPHIS HETERODERMUS, nob.

Sp. Char. Color green; 15 rows of scales, many of the scales marked with white, more especially upon their external border, sometimes both the internal and external. Total length 1 foot 9¼ inches; abdom. sc. 157, sub-caud. 83.

Dimensions. Length of head 7 lines; breadth 4; of tail 5 inches 9 lines.

Habitat. Gaboon. One specimen presented by Dr. Henry A. Ford.

Gen. Remarks. We at first supposed that this serpent might be identical with the Dendrophis Chenonii, Reinhardt, from Guinea, but the nasal in that species is between two nasal plates, and according to Duméril and Bibron, the preanal scute is double. They also state that were it not for the difference in the teeth, they would consider it a true Dendrophis; now Dendrophis has a much larger row of scales along the middle line of the back, which Chlorophis has not. Duméril and Bibron also mention that in Leptophis Chenonii there are 154 urostega—M. Reinhardt, 108—126.

Fam. *LYCODONTIANS.*

Among the serpents in the collection of Dr. Ford, are three different genera of Lycodontians, three of different ages belonging to the genus Boedon, and two of undescribed genera. We propose to give an account of them, and also a Boedon presented some time ago by Dr. Burtt, U. S. Navy, from the Isle de Los.

The family of Lycodontians is characterized by Duméril and Bibron as "serpents with smooth teeth, or unchannelled, always unequal, the anterior longer than those which follow, distributed in numerous series upon the jaws, and without vacant spaces between them. Body cylindrical; head larger behind than the neck," the essential characters being the existence of smooth teeth (Aglyphodonts) "of unequal force and length in both jaws." Erpet. Gen. tom. vii. p. 357. The Lycodontians are divided into four tribes: 1, Boédonians; 2, Lycodontians; 3, Eugnathians; 4, Pareasians. In the Boédonians the palatine teeth are unequal, the submaxillary teeth separated; *those above not separated.* In the Lycodontians these teeth are *distinct, isolated;* the anterior pterygo-palatine teeth not longer than those which follow; the submaxillary teeth unequal. In the Eugnathians the submaxillary teeth are not separated by a free space, the pterygo-palatine equal; and in the Pareasians, as in the Eugnathians, the mandibular teeth are much longer in front than those which succeed them, but in the former the anterior pterygo-palatine teeth are much longer.

The essential characters of the sub-genus Boédon, belonging to the first tribe Boédonians, and the family Lycodontians, the ninth of the Aglyphodont Ophidians, in Duméril and Bibron's arrangement, consist in having "the four or five superior maxillary teeth longer by half than those which follow, and which are nearly equal among themselves and regularly spaced; then a free interval; the four or five first palatine teeth longer; the five first inferior maxillaries longer and more curved."

BOÆDON QUADRIVITTATUM, nob.

Char. Two white vittæ bordered with fuscous on each side of the head, the inferior commencing behind the eye and extending as far as the angle of the jaw, the superior passing over the eye and upon the temple, expanded inwardly upon the occiput, forming two large white irregular blotches, one on each side, uniting with its fellow on the opposite side, upon the internasals and prefrontals, posteriorly extending about 1¼ inch upon the neck, where it is lost. Body and tail uniformly brown above, white beneath with dark colored maculations. 27 rows of scales; a single preanal scute. Total length 2 feet 8¾ inches.

Description. The head is of moderate size, depressed, covered above with nine plates; the internasals are considerably smaller than the prefrontals; the latter are in contact laterally and inferiorly with the frenal, posteriorly with the frontal, and by their postero-external margin, which is incurvated, with the superior antocular; the frontal is long, presenting a nearly straight margin anteriorly, its sides scarcely incurvated, its posterior angle acute, passing a considerable distance beyond the supra-oculars; the supra-oculars are five-sided; they do not project over the eye; the nostrils are between two plates, their superior margin in contact with the internasal, the posterior margin of the second with the frenal, its postero-superior with the prefrontals; the frenal is oblong, more or less quadrilateral, or rather pentangular, about twice as long as broad; there is one large antocular of singular shape, five-sided, larger above, the surface by which it is in contact with the prefrontal, convex, the postero-superior by which it is in contact with the supra-ocular and the frontal concave, as well as the anterior and posterior margins; there are two post-oculars, the first somewhat quadrangular in shape, the inferior five-sided; the rostral is broader than high, its latero-superior margins excavated, with an acute angle above, its inferior margin also excavated, its lateral margins rounded; there are eight supra-labials, no two of them are precisely alike in shape; the second is higher than the first, and is quite narrow above; the third is quite large, four-sided, about as broad as long, the fourth smaller than the third, the fifth five-sided, the eye resting upon the upper margin of the fourth and fifth, which are excavated to receive it; the sixth also pentangular, but higher than the fifth; the seventh also pentangular, but in a different manner, and broader than the last; the eighth also pentangular, but broader than either the sixth or the seventh, with a more obtuse angle above, and its summit lower than that of either of the two last mentioned plates; the middle labial is long, having an acute angle posteriorly, broad in front; the accessory labials are also long, and pointed behind, the anterior geneials longer and more developed than the posterior; there are seven inferior labials; two parallel rows of large plates upon the temples; superior maxillary teeth of nearly equal size and moderately curved, except the five anterior, which are longer, more robust, and more strongly incurvated; anterior inferior maxillary teeth longer than the others; palatine and pterygoid teeth in two long rows, not straight, but slightly curved anteriorly, presenting an ovoid interspace posteriorly; tongue enclosed in a sheath, with two slender pointed filaments in front; neck not so thick as posterior part of head; body moderately robust, becoming more slender toward the tail, which is of moderate length and tapering, but not pointed at its extremity; the flanks present no remarkable angularity; the scales are smooth, lanceolate and narrow anteriorly, broader posteriorly; there are 27 rows at the middle of the body, 25 near the neck, 20 near the tail, upon which there are from 6 to 15 rows.

Abdom. scut. 235; 1 single preanal; 58 sub-caud. urostega, which are in a double row.

Coloration. Uniformly brown above upon the neck, body and tail, with two vittæ on each side of the head, as above described; chin, throat and neck white; abdomen and under part of tail white, with dark colored maculæ.

Dimensions. Length of head 1 inch; greatest breadth 7 lines; length of body 2 feet 2 inches 10 lines; length of tail 4¾ inches. Total length 2 feet 8 inches 7 lines; circumference 1 inch 10½ lines.

Habitat. Isle de Los. One specimen presented by Dr. Burtt, U. S. N.

We have in the collection of Dr. Ford three specimens of a serpent formerly described in the Proceedings under the name Cælopeltis virgata, but which is a species of Boedon, and although allied to the species above described, differs from it in the following particulars: The largest of the specimens is considerably smaller than quadrivittatum; the head is shorter and more obtuse anteriorly; the temples more protuberant; the frontal is more narrow anteriorly, less acute posteriorly; the superior labials resemble those of quadrivittatum sufficiently, but there is a difference in the form of the frenal and antocular plate; there is also but a single row of temporals, with a single large one situated between the parietal and the three plates constituting this row;

the shape of the scales does not differ materially, but the number is less, there being but 23 rows near the middle of the body, from four to 11 rows upon the tail. The two lateral stripes on each side of the head are of a yellow color and more narrow, and meet at the rostral, the interspace forming an acute angle, whereas in quadrivittatum they meet upon the internasal and prefrontals, displaying a quadrangular interspace.

BOÆDON QUADRIVIRGATUM, nob.

Syn. *Cœlopeltis virgata*, Proceed. A. N. S. Vol. vii. (1854) p. 98.

Sp. Char. Head short and thick, more narrow in younger specimens; snout obtuse; frontal plate of moderate breadth anteriorly, posterior angle somewhat obtuse; 23 rows of scales; two narrow yellow lines on each side of the head, the superior commencing at the rostral, passing over the eye and upon the temple, extending about three lines upon the side of the neck; the inferior commencing at the middle of the posterior margin of the orbit, passing obliquely over the inferior post-ocular, the three last superior labials, and crossing the angle of the mouth, extends in an oblique manner a distance of three lines, and terminates at the line of junction between the neck and throat, at a distance of two lines from the superior lateral stripe.

Color uniformly brown above; neck and abdomen yellow; beneath, in the middle, the external portions of the gastrostega brown; the intermediate space spotted with brown; under part of tail brown.

Total length 2 feet 2 inches.

Abd. scut. 205; sub-caud. 45.

Description. The scales are somewhat broader than in the last described species; in the younger specimens the head is more narrow, the temples less projecting, upon which are observed two rows of temporal plates. In each of these specimens there are but 23 rows of scales. In one the internasal and prefrontals are fused together. Gastrostega 202; a single preanal; urostega 47, in 2d 190—55.

Dimensions. Length of head 9 lines; greatest breadth 6; length of neck and body 1 feet 11 inches 3 lines; of tail 3 inches 4 lines.

Habitat. Gaboon, west coast of Africa. Four specimens in Mus. Acad. N. S., presented by Dr. Henry A. Ford.

Sub-Fam. Eugnathians.

The first of the two serpents about to be described, belonging to the subfamily or tribe Eugnathians, presents a series of remarkable characters such as belong to no serpent with which we are acquainted, and which constitute a genus to which the name Hormonotus may be applied.

HORMONOTUS,* nob.

Gen. Char. Head Lycodontiform; the temples swollen; the snout rounded; the eyes prominent, looking upward and outward; internasals considerably smaller than prefrontals; vertical long, pentangular; nostril between two plates; a frenal; one antocular, three postoculars; the eye resting on the fourth and fifth supra-labial; two of the anterior teeth of the lower jaw quite large, the posterior stouter at the base, and longer than the anterior; two long anterior teeth in the upper jaw preceded by several small ones, followed by an interspace without teeth, and eight or more maxillaries of nearly equal length; palatine and pterygoid teeth in two long rows, presenting an ovoid space posteriorly; scales smooth, with a larger hexagonal row along the median line of the back; tail of moderate length, tapering to a point, with double urostega; ventral scutes passing up along the sides in a nearly rectangular manner.

HORMONOTUS AUDAX.

Sp. Char. Uniform light brown or reddish as above, yellow beneath; 15 rows of smooth scales.

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* *ορμος*, a chain, and *νωτοσ*, back.

Description. The head is depressed; the snout rounded; the temples swollen; the nostrils, which are large, are situated in a depression between two plates; the eyes prominent, latero-superior, circular, the pupil ovoid, perpendicular; the rostral plate is pentangular, much more broad than high; the internasals are of moderate size, the prefrontals of much greater dimensions, their external and inferior border in contact with the frenal, their posterior with the antocular, the supra-ocular and the frontal plates; the supra-ocular are pentangular, much more narrow anteriorly; the frontal is five-sided, its lateral margins scarcely excavated, its posterior angle moderately obtuse, two and a quarter lines in length by about one and a half in breadth; the parietals are three lines in length by two in breadth, much more narrow posteriorly; the frenal is rather long and of moderate breadth, in contact inferiorly with the second and third supra-labials; the antocular is larger than either of the three postoculars, and is pentangular in shape; there are two rows of temporal plates, surmounted by a third, of which the posterior is the largest; there are nine superior labials, the eye resting on the fourth and fifth; no two are precisely alike, the first is the smallest, the seventh pentangular, a line in breadth by half a line in height; there are seven inferior labials, each differing more or less in shape, and of which the fourth is of much greater dimensions than either of the others; the mental is triangular, the accessory labials rather long, the first geneial much larger than the second. The *neck* is much more narrow than the head, is rather long and slender; the body of very moderate thickness; the tail one-fifth of the total length. There are 15 to 17 rows of smooth scales near the middle of the body, 18 upon the neck, 12 near base of tail; the scales are short and quadrangular upon the middle, more narrow upon the neck, broad upon the tail; the scales constituting the dorsal row are considerably larger than the adjoining rows, and each scale is hexagonal in shape; this larger row extends upon the tail, but in the specimen examined appears to be interrupted near its root. Ab. scut. 221; 1 single preanal; 81 bifid sub-caud.

Dimensions. Length of head 9 lines; greatest breadth 5½; length of body 1 foot 8 inches 7 lines; length of tail 5 inches. Total length 2 feet 2 inches 4 lines.

Habitat. Gaboon, west coast of Africa.

Gen. Remarks. The outline of the head and the general arrangement of the plates, has a certain resemblance to the figure of Lycodon audax (Lycognathus scolopax, D. and B.) in the altas accompanying the Physiognomie des Serpens of Prof. Schlegel, pl. iv. fig. 18, but it is quite a different serpent from the latter, which is found in South America. It has also a certain relation, in the general disposition of the plates upon the head and teeth, with Lycognathus cucullatus, a North African serpent, but a comparison of the two proves at once that they belong to different genera. The outline of the head, the relative proportions of the internasals and prefrontals, and the form of the frontal plate, are very different; the nostrils are deeply excavated in Hormonotus; in cucullatus there is no larger dorsal row, and the scales are shorter, &c. It is also a much smaller animal.

The species which remains to be described is a quite different looking serpent from the last, presenting a series of generic characters quite remarkable, more especially the form of the frontal plate.

Gen. Char. Head cuneiform, eyes small, two small inter-nasals, two large prefrontals, a frontal about as broad as long, presenting an acute angle posteriorly; nostril in a single plate at its posterior margin, two nasals, a frenal, one antocular, two postoculars, seven superior labials, the eye resting on the third and fourth; several small teeth on the upper jaw, followed by a much larger one, after which an interspace, succeeded by a row of small and nearly equal teeth; maxillaries of lower jaw presenting a corresponding system of dentition; but the interspace behind the larger teeth do not exist apparently; body nearly the same thickness as head; tail short; scutes bifid.

LYCOPHIDION LATERALE, nob.

Sp. Char. Uniformly reddish brown above and olive below, with the exception of two lateral yellow vittæ on each side of the head, the one reaching to the angle of the jaw, the other to the posterior margin of the occiput; 17 rows of smooth scales.

Description. Head cuneiform, flat above, shelving forward, the plates exhibiting the appearance of a polished surface; snout rounded; rostral plate much broader than high, with an obtuse angle at its summit; the inter-nasals are quite small compared with the pre-frontals, their external margins in contact with the nasal and the first frenal; the pre-frontals are quite large presenting an acute angle externally, where they are in contact with the first and second frenal and the antocular; the frontal is short and broad, its posterior angle acute, its anterior and external corners bevelled, the intermediate space undulating; it measures nearly a line and a half in length, by one and a quarter in breadth; the supra-oculars are quite short, about one-half their usual length, broader posteriorly; the posterior half of their external margin in contact with the superior post-ocular; the parietals are large, much longer than broad, in contact anteriorly with the supra-ocular; the first post-ocular, and by a very small facet at their anterior and external angle, with the second posterior ocular; there is one frenal plate, longer than broad, with an acute angle posteriorly; it is in contact above with the pre-frontal; it presents a somewhat obtuse angle, and two surfaces inferiorly, the anterior in contact with the first supra-labial, the posterior with the second; its anterior and superior border is much broader than its posterior, which is externally narrow; the antocular is a remarkably large plate, more narrow above, in contact inferiorly with the second and third supra-nasal, above by an oblique facet with the frontal, anteriorly by a convex margin with the pre-frontal, posteriorly with the eye, and the anterior border of the supra-ocular plate; there are two post-oculars, the inferior the larger of the two; there are eight superior labials, no two precisely alike, the first the smallest, the sixth, which is pentagonal, the largest, the eye resting on the third and fourth; the third is separated from the anterior margin of the orbit; the fourth supra-labial and the antocular intervening; the nasal plate is somewhat quadrangular in shape, the nostril being situated in its posterior half, its posterior border in contact with the anterior border of the naso-frenal, which presents an oblique facet without any sinuation whatever; the plates upon the top of the head are all highly polished; the eye is small, the pupil ovoid, rather than round; there are two rows of temporal plates, three in the inferior, two in the row above, and a large quadrangular plate between these and the parietals; immediately behind the parietals, are two smaller plates than the latter, with a still smaller one between them; the mental and accessary labials present nothing remarkable; the anterior geneials are quite broad, larger than the posterior, which are much more narrow; four small teeth precede the larger one in the upper jaw, then follows an interspace succeeded by nine or more small teeth of nearly equal size; anterior to the large tooth in the lower jaw are also several smaller ones, succeeded by a row of nine or more small teeth, the anterior a little the largest on the left side, but not in the right; the palatine teeth are in two long rows, and present an ovoid space posteriorly; the neck is of nearly the same thickness as the head behind, the body thicker, the tail short and robust, rapidly tapering to a point; the scales are smooth and shining, those upon the neck more narrow, those upon the body broader, with rounded posterior angles; the inferior row perhaps a little the largest; there are 15 rows upon the neck, 17 upon the middle of the body, 8 near the root of the tail; the scales upon the tail appear to be irregular, about three lines from the vent they are homogeneous, but posterior to this space may be observed two parallel rows of hexagonal scales broader than the others, succeeded by smaller ones, and then a single row of four narrow and quite broad hexagonal plates; the gastrostega are narrow, the sides of the abdomen not angular.

Coloration. The neck, body and tail are brown above, inferior parts brown with a tinge of olive, presenting a shining and a polished appearance, especially the ventral and sub-caudal scutes; a yellow vitta on each side of the head meeting upon the muzzle, and extending as far as the extremity of the occiput; a more narrow one extending from the posterior margin of the eye to the angle of the mouth.

Dimensions. Length of head 6 lines; greatest breadth 3½; length of neck and body 1 ft.; of tail 1 inch 11½ lines.

Abdom. scuta 176, a single preanal, 44 sub-bifid-caudal.

Habitat. Gaboon country, one specimen presented by Dr. Henry A. Ford.

Gen. Remarks. The serpent above described belongs apparently to the genus Lycophidion of Fitzinger, but does not correspond in all respects with the admirable description of the Eugnathians by Duméril and Bibron, particularly in the size of the eyes, which they represent as " tres grands", and the form of the abdomen which is described in the species observed by them as flat, in our specimen being much rounded.* In other respects there appears to be a perfect coincidence. But two species are enumerated by them both from South Africa, viz: L. Horstockii and L. semicinctum; the first is white beneath, the second is brown, but has a series of reddish bands across the back; both want the lateral yellow vittæ of L. laterale.

Sub-Order *Opistoglyphs,* (venenosi.)

OXYBELIS KIRTLANDII.

Syn. *Leptophis Kirtlandii,* nob., Proceed. A. N. S. vol. ii. 1844, p. 62. *Dryophis Kirtlandii,* Id. Proceed. Acad. N. S. vol. vii. 1854, p. 100; *Oxybelis Lecomptei;* Dumèril et Bibron, vol. vii. p. 821. These specimens measure 4 ft. 2 inches in length, tail 1 ft. 7 inch. 10 lines. I find 19 rows of scales near the middle, 17 upon the neck, 6 near the root of the tail; the nostril is large and ovoid in a single nasal plate; there are two frenal plates in both specimens on each side of the head, the posterior in the one being much larger than the corresponding one in the other, the anterior more narrow than the anterior one of the other in the same side; on the right side in one they are narrow and oblong, in the other the anterior is much smaller than the posterior; one antocular, two post-oculars on the right side, three on the left in one; in the other three posterior on the right, three on the left; eight superior labials; the eye resting on the fourth and fifth in both specimens; posterior geneials quite long; the scales are long and slender, the inferior row the largest; the tail at its extremity almost filiform; the plates upon the top of the head, though not corresponding precisely in the cut, have the same general proportions; 170 gastrostega, a double preanal, 166 urostega, 175 in another, urostega 168.

Gen. Remarks. The description of this " Arboricole opistoglyph" by Duméril and Bibron is very characteristic of its specific relations, and extremely accurate, but they are in error in stating that it had never before been described, the first account of it having been given by us in the second vol. of the Proceedings of the Academy, 1844, p. 62, a fact for which I am indebted to Prof. Aug. Duméril himself, but who had not previously seen the animal.

The collection of Dr. Ford contains a fine specimen of Dipsas Blandingii, Hall., Proceed. Acad. N. S. vol. ii. p. 170, and vol. vii. p. 100. It is, however, not a Dipsas, and we propose for it the generic name Toxicodryas. This remarkable Arboricole serpent measures 5 ft. 7 inch. (Fr.) in length, tail 1 ft. 4 inch.; 22 rows of scales may be counted at the middle of the body exclusive of the large hexagonal dorsal row, 17 rows more posteriorly. The former description characterizes the external form of the serpent sufficiently well, but it may be added that the supra-labials are for the most part bordered with black, and that 25 large blotches may be counted on each side of the body; upper part of neck of same color as occiput, probably green during life. There is but a single channelled posterior tooth on each side in these specimens, and therefore they cannot belong to the genus Triglophodon of Dum. and Bibron, which has three; the posterior geneials are longer than the anterior, but of about equal breadth.

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* We had proposed for this serpent the generic name Lissophis, but have not well authenticated specimens of Lycophidion to compare with it; future observation must determine whether the former or latter name shall be retained.

TOXICODRYAS, nob.

Gen. Char. A single tooth channelled anteriorly in the posterior part of the upper jaw, much longer than the others, and more robust; the other superior maxillary teeth smooth, of nearly equal length, well developed, and equally spaced but wide apart, the two anterior somewhat shorter; five or six in number; pterygo palatine teeth well developed, the anterior the longest; three anterior teeth in the lower jaw longer than the others, and stouter, the three posterior the smallest, the three intermediate ones smaller than the three anterior, but larger than the three posterior; unequally spaced; head covered above with nine plates; a rostral broader than long, two broad inter-nasals, smaller considerably than the pre-frontals; a frontal of moderate length, but broader anteriorly; supra-oculars remarkable for their great breadth posteriorly; parietals of moderate size; nostrils large, lateral, between two plates; a quadrangular frenal; two anterior and two posterior oculars; two rows of plates between the parietals and supra-labials; eye resting on the fourth, fifth and sixth of the latter; body very long and much compressed; scales long, narrow and quadrangular; a dorsal row much larger, hexagonal; abdominal scutes extending upon the flanks; sides of abdomen angular; tail long with bifid scutes.

Toxicodryas Blandingii, nob.

Syn. *Dipsas Blandingii*, vol. ii. p. 170—vol. vii. p. 100.

Sp. Char. 17 to 22 rows of scales; color greenish olive above; three black spots upon the head; one at the internal and posterior angle of the supra-ocular, the other near the internal and posterior margin of the parietals; supra-labials bordered posteriorly with black, one of these spots broader than the rest, reaching up nearly to the eye; body greenish olive above, with 25 large dark colored alternate blotches on either side; upper part of tail marked in a similar manner; chin, throat, abdomen and under part of tail yellow; ab. scut. 274, 1 bifid preanal; sub-caudal 137; circumference 3 inches, total length 5 ft. 7 inch. (Fr.) tail 1 ft. 4 inch.

Habitat. Liberia and Gaboon. Two specimens, one presented by Dr. William Blanding, the other by Dr. Henry A. Ford.

Gen. Remarks. We formerly placed this serpent in the genus Dipsas, from its large head, compressed body and the large row of hexagonal scales along the middle line of the back; but a careful examination of the teeth, as well as of the external form, shows that it does not belong to that genus; it is one of the most remarkable of the Arboricole Opystoglyphs, so characteristic of the herpetological fauna of the western coast of Africa; we had supposed also that this serpent might be identical with the Dipsas cynodon of Schegel, (Opetiodon cynodon D. and B.) but in Opetiodon there is but one pre-ocular, the flanks are rounded, pupil oval, &c. The frontal and supra-ocular plates in Toxicodryas are quite different in shape from the corresponding plates in the figure of Dipsas cynodon by Prof. Schegel (Abbildungen, pl. xi. fig. 10 and 11,) the supra-oculars being more narrow in front, the frontal more narrow posteriorly; the two last supra-labials are different in shape and much larger in Toxicodryas than in fig. 11. In O. cynodon, the pre-oculars are almost contiguous to the frontal, in T. Blandingii they are separated by an interval of about a line, seven or eight temporals instead of five, of which three touch the post-oculars (two in T. Blandingii.) Cynodon is a native of Java and Borneo. The characters of the serpent above described, resemble much those of Triglophodon fuscum, also from the Gaboon, (D. and B. vol. vii. p. 1102, Appendix,) but it has *three* channelled posterior teeth. There can be no doubt that although allied, Toxicodryas and Triglophodon are distinct genera; compared with a specimen of Triglophodon dendrophilum from Java, of which we have a fine specimen in our collection, due to the liberality of the administration of the Garden of Plants, through Prof. Duméril, we find that the scales in T. Blandingii are more narrow, the tail longer and more slender, and the plates upon the head different; the vertical in T. Blandingii is much more narrow posteriorly, the rostral not so high, the parietals are much smaller; there are *two* pre-oculars, and the inferior margin of the orbit is formed by the fourth, fifth and sixth supra-labials; in Triglophodon by the third, fourth and fifth, &c. Both have a large row of scales along the middle of the back. Toxicodryas is a genus quite distinct from Tarbophis, (Ailurophis, Bonap.)

Sub-Ord. *Proteroglyphs.*

Among the serpents in the collection of Dr. Ford, is one of the black variety of Naja, six feet 3½ inches in length. There is also a younger and much more slender specimen. Besides these we have another and much larger one than either, presented several years ago by Dr. Ford, measuring 6 ft. 9½ inch. (Fr.) in length. Neither of these correspond with the description or figure of the black variety of Naja haje in Dr. Smith's work on the Reptiles of Southern Africa. The most striking difference consists in the coloration, the South African species being uniformly black below, the variety from the Gaboon having upon the anterior part of the abdomen a greater or less number of black bands of unequal breadth, the interspaces being yellow, the throat and chin also yellow, (white probably during life). Duméril and Bibron state that the Museum of Paris possesses three large specimens of the black variety described by Dr. Smith, one from Senegal, one from Morocco, the third from the White Nile. They admit but two species of Naja, the tripudians and haje; in the first the sixth superior labial is quite small, in the latter very large; which also wants the spectacle figure upon the neck, and the neck is less dilatable.

This difference between the labial plates, however, is presumed to be not an invariable character. In the plate of Naja haje in the great work on Egypt, there are several black bands passing across the abdomen, *near its middle*, one of them very broad, more so than in any of the Gaboon specimens, which in that variety are also situated much more anteriorly. Duméril and Bibron state that in the greater part of the specimens they possess from Java, Sumatra, China and different regions of the East there are several gastrostega of a beautiful black, forming a transverse band more or less broad, followed by other scutes of a white color. Comparing the large Gaboon specimen with A. tripudians, from Bengal, I find a single dark colored band nine lines in breadth, running across the anterior part of the abdomen, quite near to the throat, and as stated by Prof. Schlegel the sixth supra-labial much smaller than the corresponding one in the African species. In the tripudians this plate is separated from the post-oculars by a large plate, in N. haje it is in contact with them. There is a difference in the proportional size of the inter-nasals and pre-frontals, but this may be merely the effect of age; for, although the former are comparatively much smaller than the latter in the *adult* W. African specimens, they more nearly correspond in the younger individual as they do in that from Bengal. The frontal plate is pentagonal in both, but in the Asiatic specimen it is quite narrow.* In the E. India serpent there are 23 rows of scales near the middle of the body, in the Gaboon but 19. We have not the materials for a thorough study of the two admitted species, but consider those from Gaboon as belonging to a variety of the haje, for which the name melanoleuca might be given, with the following characters: Length over seven or eight feet; color black above and beneath, in much the greater part of its length; chin white, neck and anterior part of abdomen white, with black transverse bands varying in breadth, with white interspaces of unequal extent; sides of head white or yellow, the margins of the labial plates bordered with black; 19 rows of scales. Ab. sc. 213, sub-cand. 66.

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* In the plate of the head of the tripudians in Prof. Traill's translation of Schlegel it is represented as quite broad, perhaps the adult.

Dimensions. Length of head 2½ inches; greatest breadth 2; length of tail 1 ft. 1½ inch. Total length 6 ft. 9½ inch.; circumference 4¾ inch. Three specimens in Mus. Acad. N. S., presented by Dr. Henry A. Ford.

Gen. Remarks. This is one of the largest and most savage looking of the venomous serpents. Dr. Smith gives from 5 to 6 feet as the length of the South African species. According to him they feed on small quadrupeds, birds and eggs, and climb trees readily to rob nests. The genus Naja belongs to the 4th section or sub-order of Ophidians in Duméril and Bibron's arrangement, viz: The Proteroglyph or Apistophid serpents (serpents Proteroglyphes dits Apistophides,) of which the essential characters given are,—

" Serpents in which the *anterior* teeth are *channelled* and not perforated at their base," and to the first group into which this section is subdivided, viz: the Conocercal Proteroglyphs, (P. conocerques) having a conical or rounded tail; the second group, the platycercals, and which live in the water having this organ flat. The family of Conocercals includes nine genera, viz: Elaps, Pseudoelaps, Furina, Trimersurus, Alecto, Sepedon, Causus, Bungarus, Naja, two-thirds of which exist in our collection. In the largest of the three specimens there are two large and strong anterior channelled teeth, of about equal length on the left side; on the right side one, having behind it one or two smaller teeth. In the other specimen but a single one is seen on each side; palatine and pterygoid teeth in two longitudinal rows.

Ab. Scut	213	1 Sing. Preanal, sub-caud	66
"	221	1 " "	65
"	219	1 " "	64

the tail terminating in a sharp pointed cone.

Another of the formidable serpents with which W. Africa abounds is the Echidna nasicornis, *Cerastes nasicornis*, Wagler, of which Dr. Ford's collection contains one fine specimen.

ECHIDNA NASICORNIS, Merrem.

Syn. *Col. nasicornis*, Shaw, Misc. 94, Gen. Zool. v. iii. p. 297, pl. 204.

Vipera nasicornis, Daudin, Rep., vol. iii. p. 322.

Vipera nasicornis, T. Reinhardt, Bescrivelse af Nogle nye Slangenarter, 1843. T. iii. fig. 8, 9, 10.

Cerastes nasicornis, Wagler, Amph. p. 150.

Echidna nasicorns, Merrem, Tent. p. 178.

Clotho nasicornis, Gray, Zool. Mis. 60. Cat. Br. Mus. Rept. p. 25.

Vipera hexacera, Dum. et Bib., T. vii. p. 1416, Atlas pl. 78, bis. fig. 2.

We have now three specimens of this deadly but magnificently robed serpent in our collection, two adult and one very young, all from the Gaboon; the serpent formerly figured in the Proceedings (1847, vol. iii. p. 320) having been lost. We are ourselves now somewhat in doubt in regard to the animal described and figured in the Proceed. Acad. N. S., vol. iii. p. 320, (1846—7.) The description of the Echidna Gabonica, D. & B., given in the Erpétologie générale, corresponds with it perfectly, and no mention is made, nor does the drawing display the narrow headed black mark bordered with yellow, so characteristic of E. nasicornis, and the longitudinal bars upon the middle line of the back are not cut in triangle at their extremities, which is the case even in the very young nasicornis. Both specimens referred to have unfortunately been destroyed, the skull of the adult alone remaining, which, however, I am inclined to believe belongs to E. nasicornis.

As no detailed account of this remarkable animal appears to have been published, we propose to give a full account of it.

Sp. Char. Three horny projections on each side of the muzzle, the anterior small, the posterior which is immediately over the nostril quite long.

Description. The head is more or less triangular above, covered with *scales*, very strongly carinated, the carinations so developed as to assume the form of triangular leaf-like projections, giving a sensation of roughness to the latero-superior upper part of the head; there are three or four scales immediately within the circular row above surrounding the eye, which are larger than the others; the carinæ of these scales are less foliated than the rest, and resemble spines; the eye is of moderate size, ovoid in shape, and somewhat projecting; the nostrils are large, on a line with the eye, three lines from it and are not lateral, but look upward and outward; there are three foliated scales upon each side of the muzzle, the posterior 6 lines in length; the rostral plate is broad and narrow with a convex margin above, concave below, very different in shape from that of Vipera ammodytes; there are sixteen supra-labial plates on each side, most of which resemble each other in shape, presenting a serrated margin inferiorly; there are sixteen superior labials which differ from each other, and the anterior are more extended transversely; the anterior geneials are very large; the posterior quite narrow; the pterygo-palatine teeth do not pursue a strictly longitudinal course but diverge posteriorly; the fangs are enormous and lie entirely concealed in their sheath; the neck is more narrow than the posterior part of the head, the body quite thick at the middle; the tail rather short, terminating in a horn-like pointed projection; the scales are short and broad, strongly carinated, the inferior row much the largest; 44 may be counted in a row near the middle of the body; 18 on each side of the neck, 16 rows at the base of the tail. Ab. scuta 128; sub-caud. 31; 1 long preanal.

Coloration. A dark jet black arrowheaded blotch upon the top of the head commencing between the posterior horns, its hinder extremities reaching as far as the posterior margin of the head, the middle portion being lost upon the neck; this blotch has a narrow border of yellow; upper and lateral part of the head brownish, or brownish mingled with yellow; a narrow stripe of yellow commencing near the middle of the range of scales which margin the orbit below, and terminating at the inferior margin of the twefth supra-labial, less distinct in older specimens; posterior to this a large dark-colored triangular blotch reaching from the eye to the angle of the jaw; a small triangular yellow one upon the side of the head close to its anterior margin, its apex reaching to within a line of the eye; the intervening space between it and the narrow yellow stripe, dark colored, as well as that part of the side of the head in front of the eye reaching to the anterior extremity of the muzzle, on a line with the inferior border of the nostril; upon the middle line of the back and tail a series of oblong yellow blotches, with triangular emarginations anteriorly and posteriorly, imbedded in a black ground; sides dark brown, in younger individuals mingled with reddish and yellow, black spotted; the lateral extension of the dark colored blotches in which the yellow bars are imbedded triangular in shape; a series of yellow spots on each side at the point of juncture with the abdominal scutes; chin and throat orange mottled with black; abdomen and under part of tail yellow, thickly mottled with black.

In a very young specimen measuring 10¾ inches in length, the coloration of the head is nearly the same, the middle line of the back presenting a longitudinal series of black rhomboids alternating with the lighter colored bars with triangular emarginations; these bars are much shorter upon the anterior part of the body and upon the neck; the posterior prolongations of the arrowheaded blotch upon the head extend half an inch upon the neck, and present a triangular cut posteriorly; there is a series of large dark colored spots upon the sides alternating with yellow; chin and throat dark colored; abdomen thickly maculated with dark subquadrate spots.

Dimensions. Length 2 inches 3 lines; breadth 1 inch 11; length of body 2 feet 8 inches (Fr.;) of tail 6 inches 7 lines. Total length 3 feet 4 inches 10 lines; circumference 6 inches.

Habitat. Gaboon and Liberia. Three specimens in Mus. Acad. presented by Dr. Henry A. Ford.

Gen. Remarks. Duméril and Bibron are evidently in error in placing this animal in the genus Vipera. In Vipera the nostrils are lateral, in Echidna latero-superior. In Vipera ammodytes the rostral plate is very high; the posterior geneials differ much; ammodytes has a large supra-ocular; there is but one row of plates between the supra-labials and the rows of scales which surround the eye; the scales in ammodytes are long, short in nasicornis. The same may be said of Vipera aspis. Compared with Echidna arietans of the Cape, we find absence of the supra-ocular, two rows between the scales beneath the eye and the supra-labials, and the scales short, like those of nasicornis. The difference in the number of rows of scales between the eyes and the supra-labials constitutes a good *specific* character in serpents belonging to the same genus, but the position of the nostrils and the form of the scales are constant and of generic importance.* Echidna nasicornis belongs to the 5th section or suborder of Ophidians in Duméril and Bibron's arrangement, viz., the Solenoglyphs, (serpents Solenoglyphes dits Thanatophides,) of which the following are the essential characters:

" Serpents having teeth in both jaws, of which the anterior supra-maxillaries are alone channelled and perforated by a canal in the length of their base."

Ord. BATRACHIANS.

In the synoptical table of the genera of Raniforms, in the 8th volume of Duméril and Bibron's work, (1841,) but two genera of the 16 there determined are mentioned as having no palatine teeth, viz., Oxyglossus and Leiuperus; the first with a rhomboidal, the second with an oval tongue, in both entire. In Arthroleptis, Smith, (Illustrations of South African Zoology, 1849,) the toes are without webs. In the Batrachian now under consideration, the most remarkable structure is shown in the tongue, which presents a central pedicel, but is bound down in its anterior half along the middle by cellular tissue, as in the genus Heredia, among the Urodeles recently discovered in California. We propose for this remarkable Batrachian, and which, should this conformation be found to exist in other individuals, would, from the connecting link between the Anourous Batrachia, and the Caducibranchiate Urodeles, the name of

HETEROGLOSSA.

Head nearly as long as the body, and about as long as broad, depressed above, narrow in front; teeth in the upper jaw small, smaller in front, posteriorly recurved, sharp-pointed; nine in the lower jaw; *no palatine teeth*; posterior nares suboval, eustachian foramina small; tongue suboval, deeply notched posteriorly, attached by a cylindrical pedicel at the centre, entirely free in its posterior half; bound down anteriorly along the middle line by cellular tissue, reaching from the tip to the pedicel, free laterally except at the apex; body short; toes free anteriorly, webbed at their base posteriorly; tympanum distinct.

Heteroglossa Africana, nob.

Sp. Char. Chocolate brown above, abdomen ash colored; posterior nares small.

Description. The head is about as broad as long, triangular in shape, rounded in front, depressed above; the eyes are of moderate size, not prominent; the tympanum also of moderate size, quite distinct, is situated immediately over the angle of the jaw; posterior nares suboval, small; the fingers are quite free, the first and second of about equal length, the fourth longer than these, the third the longest; sub-articular tubercles distinct; extremities of first and second toes nearly on a line with each other; third toe longer than second, the fourth much the longest, the fifth longer than either the first or second; the toes are webbed at their base, the web extending to about the middle of the antepenultimate phalanx; abdomen perfectly smooth; skin smooth above; no rows of pores visible.

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* Since the above was written we have received the December number of Guerin (Revue et Magazin de Zoologie, 1856,) in which I find that Prof. A. Duméril has himself corrected this error.

Coloration. General color dark brown, or chocolate above, mingled to a slight extent with ash; upper jaw presenting several chocolate colored spots upon a lighter ground; posterior extremities barred with dark brown approaching to black; abdomen ash colored; chin and throat chocolate spotted; under surface of extremities blackish mingled with ash; when examined with a magnifier the body appears to be blotched all over with dark brown on a much lighter ground.

Dimensions. Length of head and body 1 inch; length of head 5½ lines; breadth 5; from tip of snout to anterior extremity 5; distance between anterior and posterior extremities 5 lines; length of arm 3 lines; of forearm 2½; of hand to extremity of longest finger 3 lines; of thigh 5½ lines; of leg 6 lines; of foot to extremity of longest toe 5½ lines.

Habitat. Gaboon. One specimen in Mus. Acad. N. S. presented by Dr. Henry A. Ford.

HYLA PUNCTATA, nob.

A young specimen of Hyla punctata, nob., Proceed. Acad. N. S. vol. vii. p. 193.

It measures 1 inch 4 lines in length from the extremity of the snout to the posterior extremity of the body; head large; body very slender posteriorly; the color is of a darker brown than in the adult, and a number of darker blotches may be observed over different parts of the animal; a characteristic mark, and one which does not appear to have been mentioned in the previous description, consists in the presence of an orange-colored undulating line a short distance above the anus, commencing on the posterior part of the thigh about two lines from the latter; beneath this line the ground color is more obscure. This line exists also in the adult specimen, but is of a yellow color.

PIPADÆ.

DACTYLETHRA, Cuvier.

There is one specimen of Dactylethra, but this differs from the Dactylethra of the Cape, and more especially in the presence of a sharp pointed spur projecting from the cuneiform bone, which is not observed in Dactylethra capensis.

DACTYLETHRA MÜLLERI, Peters.

Sp. Char. Black above, dark brown or chocolate below; a cutaneous appendage beneath each eye; numerous crypts upon the muzzle, chin, and under part of the muzzle; a series of larger longitudinal glands upon chin; a sharp pointed spur at base of first toe.

Description. The head is small, depressed; the snout rounded; the eyes prominent; the nostrils near the extremity of the snout a line apart, and three-fourths of a line from the anterior border of the eye; the snout is quite smooth above, but covered as far as midway between the eyes, (the posterior border of which is but three lines from its anterior extremity,) with numerous small elevated granules or crypts, the under part also, as well as the chin; a semicircular row of longitudinal glands, nine or ten in number, with open mouths, four or five in each longitudinal row upon the chin; no tongue or palatine teeth; numerous small teeth in the upper jaw; eustachian foramen large, broader than long; body large, subquadrate, about a line broader posteriorly, where, as Duméril and Bibron observe, it has the appearance of being truncate; perfectly smooth both above and below; with a magnifier, however, presenting a minutely granular appearance; no lateral line of pores visible; anterior extremities small, posterior very large; fingers free; fourth finger stoutest, second longest, third not as long as second, first and fourth of nearly equal length; thighs and legs greatly developed; toes webbed as far as distal extremity of first phalanx, the three first provided with a nail, sharp pointed, slightly incurvated; these nails are convex above, but present a ridge along their middle below; a sharp pointed short spur at the base of the first toe; second toe longer than first, third longer than second, fourth and fifth of nearly equal length; no subarticular tubercles visible; posterior extremities smooth both above and below, no pores upon the thighs.

Coloration, as given in the specific characters.

Dimensions. Length from tip of snout to anterior extremity 6 lines; between anterior and posterior extremities 10 lines; of arm 1½ lines; of forearm 3; of hand to extremity of longest finger 3½ lines; of thigh 6 lines; of leg 7; of foot to extremity of longest toe (the third) 8 lines.

Habitat. Gaboon. One specimen presented by Dr. Henry A. Ford.

Gen. Remarks. Dactylethra belongs in Duméril and Bibron's arrangement, to the second group of the Anourous, or Phrynaglossal Batrachians, (Phrynaglosses) and family of the Pipæformes, being entirely destitute of a tongue, whereas the 1st group, or the Phaneroglossal, have this organ "developed in a greater or less degree." The Phrynaglossal Batrachians, including but two genera at present known, viz., Dactylethra and Pipa, have also this very remarkable peculiarity, that instead of two eustachian foramina, there is but one, and that situated at the middle of the posterior part of the palate. In Dactylethra Mülleri this is very large. We had proposed for this singular Pipæform the name spinosa, from the spur at the base of the first toe, but having received the 12th number of the Revue de Zoologie for 1856, we find it mentioned and referred to in the interesting and important paper of Prof. Aug. Duméril, with the well known and honored name Mülleri given to it in 1844 by Prof. Peters of Berlin, (Monats Bericht ber Kon. preuss. Acad. zu Berlin, 1844, p. 37) who has found it also in Mozambique.

Having now finished the notice of Dr. Ford's collection, which contains so many animals new to science and of great importance in the study of the geographical distribution of Reptiles, I propose to correct some errors in former papers of mine upon the Reptiles of Western Africa—which either had escaped my attention, or which a better knowledge of the subject, and the aid of my vade mecum in that branch of science, Duméril and Bibron, have enabled me to point out. Pachydactylus tristis appears to be identical with Platydactylus theconyx, a common West India animal, the label indicating the locality having been erroneous. Tropidolepis Africanus and Calotes versicolor are identical with Agama Colonorum. Python Liberiensis is identical with Python bivittatus, (Python Sebæ, D. & B.) admirably described by Prof. Schlegel and long known.

BOA LIBERIENSIS. Proceed. Acad. N. S., vol. vii. (1854) p. 100.

The animal indicated is not identical with Python Liberiensis, (Python bivittatus, Schlegel,) the latter specimen having at the time been mislaid, but is the young of Epicrates cenchris from S. America.

Fam. *SYNCRATERIANS*, (innocui.)

DENDROPHIS FLAVIGULARIS, Proceed. A. N. S. vol. vi. p. 205.

The Aboricole serpent described in the Proceedings of the Academy with the above name is not a Dendrophis, but presents characters quite sufficient to constitute it a new genus. It differs from Dendrophis in the following particulars: 1st. Dendrophis is an Isodontian, the teeth having equal proportions, the Syncraterians having the posterior longer. 2d. It wants the larger row of scales alongthe median line of the back, characteristic of Dendrophis. 3rd. The eye in Dendrophis rests on the fifth and sixth supra-labials. 4th. The rostral appears more upon the top of the head, and the internasals are proportionably larger. 5th. In Dendrophis the frontal is more acute posteriorly, and the parietals are longer than broad. 6th. In Dendrophis the frenal is long and narrow and not quadrate; there are two post-oculars instead of three, and the temporal plates are more numerous. 7th. The neck is more narrow in Dendrophis, the abdomen is angular and the scales are smooth. In Herpetodryas (Isodontian) the rostral opens in a *single* plate, there is but one post-ocular, the parietals are long, the eye rests on the third and fourth supra-labials, and the shape of the scales is very different, being lanceolate and not long and quadrangular; the internasals are smaller in proportion, the rostral does not extend so far backward on the top of the head, and the frontal differs in shape; it approaches more nearly Leptophis (Syncraterian), a genus also existing on the West Coast of Africa, but in Leptophis, the internasals are proportionately *larger*, the frontal more acute posteriorly, the rostral quite different in shape, the frenal long and narrow, but two post-oculars, the eye resting on the fifth and sixth supra-labials, the latter plate being much prolonged at its posterior and superior angle, and the posterior geneials, or intermediate sub-maxillary plates, are longer than the anterior and more narrow. In Bucephalus the scutes beneath the tail are bifid for one-fourth of its length, simple in the remainder, and the posterior teeth are channelled (Opistoglyph); we propose therefore for this remarkable Arboricole Ophidian the generic name

THRASOPS.*

Gen. Char. Head long, flat above, somewhat truncate anteriorly; shelving in front; rostral extending upon the top of the head; internasals of about same length as pre-frontals; frontal three and a half lines in length, and about as broad anteriorly, rounded posteriorly; parietals short and broad, nostril between two plates; a quadrangular frenal; one antocular, three post-oculars; eye resting on the fourth and fifth supra-labials; pupil circular; posterior geneials broader than the anterior; teeth of the upper maxillaries Syncraterian, the posterior twice as long as the anterior, not channelled, but trenchant, the preceding ones sharp pointed, a wide space in front destitute of teeth; pterygo-palatine teeth small, in two nearly parallel rows; mandibular teeth presenting no larger or longer ones anteriorly, the posterior ones a little shorter; neck nearly as broad as posterior part of head, body long, rather stout in the middle, covered with long and quadrangular imbricated and carinated scales of about equal breadth except those of inferior row which are broader and shorter than the others; scales and scutes presenting a silken appearance; abdomen angular but not distinctly so, the gastrostega ascending obliquely upon the flanks; tail long, sub-caudal scutes bifid.

THRASOPS FLAVIGULARIS, nob.

Sp. Char. 13 rows of scales; jet black black above with a silken lustre, mingled with brown upon the head; lips dove color; chin and throat white, or light yellow; neck white or light yellow, black spotted; abdomen and under part of tail black or yellowish; length 5 ft. 10¾ inch. (Fr.)

Habitat. Gaboon; two specimens in Mus. Acad. N. S. one presented by Dr. Henry A. Ford, the other by Mr. DuChaillu.

Gen. Remarks. The description in the 4th vol. of the Proceedings is quite accurate, and characterizes this serpent well, except its dentition. Its jet black and silken lustre, and large and somewhat impudent eyes, make, we should think, this reptile one of the most remarkable among the Arboricole Ophidians so numerous in Western Africa.

Coronella triangularis, nob. Proceed. Acad. N. S. vol. vii. p. 140.

Coluber lævis, Proceed. A. N. S. Vol. ii. p. 118. This serpent described under the above names, is not a Coronella, but belongs to a new genus of Syncraterians, for which we propose the name

HETERONOTUS.

Gen. Char. Dentition of Coronella. Head long, temples somewhat swollen, eyes of moderate size, nostrils latero-superior between two plates; a short frenal; one pre-ocular; two post-oculars; eight superior labials, the eye resting on the fourth only; a broad rostral; two internasals rather long; two broad pre-frontals; a long hexagonal frontal; two supra-orbitar, and two parietal plates, the latter of moderate length; a small occipital; neck more narrow than posterior part of head, body cylindrical, covered with broad quadrangular scales at the sides, hexagonal above; tail rather long and tapering, sub-caudal scutes bifid.

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* *Θρασος*, audax, and ὦψ, oculus.

HETERONOTUS TRIANGULARIS, nob.

Sp. Char. Color light olive above, with about fifteen narrow transverse yellow fasciæ from six to eight lines apart, commencing on the neck and terminating near the middle of the body; a series of triangles, olive and yellow upon the sides, the one inosculating with the other, the yellow lines upon the back conjoining the apices; 17 rows of scales near the middle; ab. sc. 148, 1 bifid pre-anal; sub-caud. 100.

Description. The head is long, narrow and rounded in front, somewhat protuberant at the temples, covered above with nine plates exclusive of a very small one looking like an occipital; the rostral measures about two lines in breadth by one in heighth; presenting more or less distinctly three facets above, the two exterior in contact each with the naso-rostral, the middle with the internasals, the external margin convex, the inferior concave; the naso-rostral is quadrangular, the naso-frenal rhomboidal in shape; the frenal is also quadrangular with its supero-posterior angle rounded; the two nasals are in contact above with the internasals, the frenal with the pre-frontal; the pre-ocular is large, its superior portion much more so than the inferior; rectangular below triangular above, presenting an anterior and posterior angle and one superior, in contact inferiorly with the third and fourth supra-labial, above with the pre-frontal and supra-ocular; there are two post-oculars, the inferior prolonged forward, its anterior portion between the fifth supra-labial, and the eye, which reclines upon it; the internasals are longer than broad, the pre-frontals on the contrary remarkable for their breadth; they pass down on the side of the head between the naso-frenal and pre-ocular, to reach the frenal as above described; the frontal is remarkable for its length, and in this respect differs greatly from Coronella, in which it is short, and broader than long; it is hexagonal and more narrow posteriorly; the supra-oculars are much longer than broad, more narrow in front; the parietals are of moderate size, in contact anteriorly with the supra-ocular and the superior post-ocular; there are eight superior labials on the left side, the seventh and eighth on the right being fused together and presenting one large plate; the inferior margin of the eye rests on the fourth, which is more distinctly quadrangular, than any of the other superior labials; there are five plates between the supra-labials and the parietals, two in front and three posteriorly; the anterior geneials are somewhat broader than the posterior and not quite so long; the supra-maxillary teeth are long, smooth, unequally spaced, the posterior teeth the longest, the two anterior more recurved than the others; pterygo-palatine teeth much smaller, straight, their points thrown far backward, in two long rows; these rows are not parallel, but approach each other near the middle, and diverge anteriorly, the two presenting a long urceolate outline; the teeth in the lower jaw are much smaller than those in the upper, shorter anteriorly; the *neck* is more narrow than the head posteriorly, the body more or less cylindrical and much thicker in the middle, decreasing toward the tail, which is of considerable length, and tapers to a point; there are 17 rows of smooth scales near the middle of the body, the same number upon the neck, 13 upon the tail near its root; the inferior row of of scales is the largest; those upon the sides about as broad as long (1½ line,) quadrangular; those upon the back distinctly hexagonal, and somewhat narrower; this difference in the form of the scales is indistinct upon the neck and posterior part of the body; gastrostega rather broad but not ascending upon the flanks which present no marked angularity.

Coloration. Head yellowish above mingled with olive; the three or four posterior of the superior labials bordered inferiorly with black, as well as the posterior margin of the fourth; several of the inferior labials margined with black; chin and throat yellow, black spotted; ground color olive above, with about

15 narrow yellow transverse fasciæ, extending a short distance beyond the anterior half of the trunk; a series of lateral olive colored triangular markings, 28 in number, on each side of the neck and body continuous with the ground color above, and the apex inferior, the same number of yellow ones inosculating with the latter, and continuous at their bases with the yellow ground color beneath ; the transverse fasciæ terminating laterally at the apices of these yellow triangular interspaces ; throat, abdomen, and under part of tail yellow, with numerous bluish or olive colored spots.

Dimensions. Length of head one inch ; greatest breadth 7 lines ; length of body 1 ft. 4 inch. 3 lines; of tail 8 inch. (Fr.)

Habitat. Liberia; one specimen in Mus. Acad. presented by Dr. William Blanding.

Gen. Remarks. The previous description in vol. ii. of the Proceedings contains a number of absurd typographical errors,—and is in many respects incorrect. This genus is closely allied to Coronella, but differs from it in the shape of the frontal plate which is short and broad in the latter genus, in the form of the internasals which are longer in Heteronotus, in the pre-frontals which are not so long, the position of the eye and the shape of the scales; the tail is much shorter in Coronella, and the teeth not so strongly developed. Heteronotus is another of the many remarkable forms recently discovered in Western Africa, which promises to present the most valuable materials to the Zoologist in the determination of the higher problems of science.

Sub-Ord. *Opistoglyphs,* (venenosi.)

Psammophis Phillipsii, nob. Proceed. Acad. N. S. vol. vii. p. 100.

Coluber Phillipsii, id. Proceed. vol. ii. p. 169. The head of this species presents numerous singularly shaped black markings above; the lips, chin and throat, thickly spotted with black; ground color of chin and throat yellow; the black points are much more distinct upon the flanks, scarcely visible upon the back; gastrostega marked near their external extremities with a longitudinal black mark or spot; preanal scale single ; dorsal row of scales differently shaped from the others; two or three inferior rows of scales, larger than the rest, which, except the dorsal row, are long, slender and quadrangular as in Dendrophis ; 17 rows; tail mutilated. This species of Psammophis differs from all those described by Dumeril and Bibron.

Among the serpents not in the collection of Dr. Ford, but from Liberia, and presented several years ago by Dr. Goheen, is a small Psammophis, probably young, with 17 rows of scales, and 102 sub-caudal scutes. The coloration of the head is different from that of the specimen just described.

Char. Head marked with dark colored irregular lines, simulating Arabic characters, more especially upon the parietals ; a more regular figure, long and quadrangular in shape upon the frontal; color greenish with a double row of black spots at the posterior margin of the abdominal scutes near their external margin ; lips black spotted ; chin and throat white ; ab. scut. 164, 1 single preanal, sub-caud. 102, 17 rows of scales.

Gen. Remarks. The shape and arrangement of scales are the same as in Phillipsii, the dorsal row differing from the others, being more narrow anteriorly ; (probably the young of the preceding species.)

Dipsas carinatus. Proceed. Acad. N. S., vol. ii. p. 119.

This description contains numerous typographical errors ; thus, the vertical plate is put for the rostral, the nostril for the eye, &c. The name is pre-occupied, having been given to a species of Pareas (Wagler) by Prof. Reinhardt, (Dipsas carinata,) from Java. The teeth in this specimen are all lost, so that it is impossible to say to what genus it really belongs.

——— carinatus.

Sp. Char. Color light or yellowish above with about 75 transverse narrow irregular lighter colored yellow fasciæ, terminating at the external margin of the abdominal scutes; chin and throat yellowish; abdomen greenish, mingled with yellow; tail olive above, white below. Length 2 ft. 1 inch 2⅓; ab. scut. 247; sub-caud. 73; 1 single preanal.

Description. The body is much compressed; the scales all distinctly carinated; seventy-five oblique narrow yellow bands may be counted upon the body; head yellowish above, marked with dark colored irregular lines; the most conspicuous of these are two irregular ones over the eyes and two large ones meeting upon the middle of the frontal, and diverging in a V-shaped form, and extending as far as the posterior margin of the parietals, the right branch in the specimen examined continuous with another extending a short distance upon the neck; these dark colored lines present longitudinal patches of yellow within; scales of moderate length, rather narrow, presenting an angle posteriorly, the carinæ in the middle, and running the whole length of the scale, the inferior row the broadest; 22 rows near the middle of the body; on either side three rows of narrower scales in the specimen examined, immediately above the second inferior row; flanks angular, abdomen flat, but the gastrostega not ascending upon the sides of the body; tail of moderate length, tapering to a point. *Plates of head.* A rostral broader than high, not extending upon the snout, two inter-nasals and two pre-frontals, the former smaller than the latter; a frontal longer than broad, quite broad anteriorly, (2½ lines nearly by 2 in breadth,) more narrow posteriorly, distinctly hexagonal; parietals well developed, rather long, broad in front; supra-orbitar long and narrow, presenting two facets displaying an angle anteriorly, the superior in contact with the pre-frontal, the inferior with the ant-ocular and two posterior, the inferior in contact with the superior post-ocular, the superior, which is greatly extended, with the parietal; nostril between two plates, the posterior much the larger, there being apparently no frenal; a single and large pre-ocular broader below; two post-oculars, the inferior the larger of the two; temporal plates but two in number (one above the other,) between the supra-labials and parietals; eyes of moderate size, round, resting on the third and fourth supra-labials; seven superior labials, the fifth quadrangular, the sixth and seventh the largest; anterior genials broad, the posterior singular in shape, broad, their external margin three or four times longer than the internal; ab. scut. 247; sub-caud. 73; length of head 8 lines; breadth 4½; length of body 2 ft.; of tail 4 inch. 4 lines. Total length 2 ft. 1 inch 4 lines; circumference 1½ inches.

Habitat. Liberia. One specimen in Mus. Acad. N. S., presented by Dr. William Blanding.

Sub. Ord. *Solenoglyphs* (Viperidæ.)

ATRACTASPIS CORPULENTUS, nob.

Syn. *Brachycranion corpulentum*, Hallowell. Proceed. Acad. N. S., vol. vii. p. 99.

This is no doubt a distinct species from the Atractaspis Bibronii, Smith, of the Cape of Good Hope.

ATRACTASPIS CORPULENTUS.

Sp. Char. But seven plates upon the top of the head, two pairs only between the rostral and frontal;* eye resting on the fourth supra labial, the third prolonged at its postero-superior angle, touching the eye anteriorly and inferiorly; body much stouter than in A. Bibronii; 25 rows of scales, twenty-three upon neck, 20 at posterior extremity of body, commencing at the preanal scale, where the body is only 4½ lines in breadth, 8 lines at the middle; color shining black above, brownish beneath; ab. scut. 182; sub-caud. 25; preanal single. Total length 1 ft. 8½ inches.

Habitat. Gaboon. One specimen in Mus. Acad., presented by Dr Henry A. Ford.

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* Future observation must determine whether this be a constant character.

In A. Bibronii, the ab. and sub-caud. scuta are given by Dr. Smith as 255, 20, and 225, 21. The drawing in the S. African Illustrations is magnified and therefore the fangs in both animals are probably of equal length. The gastrostega are quite broad, and extend very slightly if at all upon the flanks, which are rounded; the neck is of about the same thickness as the head posteriorly, not so thick as the body at its middle; the geneials are broad and short, there are no posterior ones, properly so called, but a single row of larger scales on each side within the supra-labials, the anterior the longest. The fangs in this serpent are remarkable; they are probably more capable of erection than Dr. Smith supposes, but their shape is peculiar; they are convex anteriorly, concave posteriorly, with a superior and inferior ridge, compressed laterally, with an elevation in the middle, resembling somewhat a squalus tooth, but of course much more narrow; they are not channelled anteriorly, but a canal can be distinctly seen running along their middle, the tooth being perforated at its base. It therefore takes its place among the Solenoglyphs and not the Proteroglyphs, as Duméril and Bibron conjectured it should from its general resemblance to Elaps, (a specimen of the animal not having at that time reached the Museum of Paris,) and the family Viperidæ, characterized by the absence of fossettes between the eyes and the nostrils, which on the contrary exist in the Crotalidæ.

Gen. Remarks. We have endeavored in the preceding paper to give as correct an account as our means will permit of the West African Reptiles that have come under our notice. All the specimens described or referred to in previous numbers of the Proceedings as presented by Dr. Ford, come from the Gaboon and not Liberia. This is an important correction, for the two countries are widely separate, Monrovia, the capitol of Liberia being in North or Upper Guinea, and the Gaboon in South or Lower Guinea; the difference in latitude between the above mentioned town and the mouth of the Gaboon where Dr. Ford is stationed as Physician to an American Missionary establishment being 450 miles, and in longitude 1400; the difference in space measured along the line of the coast 1450 miles. This rectification is of much consequence in the study of the geographical distribution of the Reptiles of Africa. When we consider the very great distance of the Cape of Good Hope from the Gaboon, it is not surprising that the reptiles of the latter region should differ so much from those of the former. Indeed, it is doubtful if among all the reptiles figured and described by Dr. Smith, there be two *absolutely* identical and common to both countries.

Dr. Smith mentions the following species known to exist in W. Africa, as found also at the Cape, viz.: Kinixis erosa, Varanus niloticus, Chamæleo dilepis, Agama colonorum, Dinophis angusticeps (Naia S.) and Causus rhombeatus. He enumerates nevertheless and describes 144 species belonging to 84 genera.

According to Prof. Peters, of Berlin, the following species existing in W. Africa are found also in Madagascar, viz., Chamæleo dilepis, Oxybelis Kirtlandii, (Lecomptei, D. & B.) Echidna nasicornis, Dactylethra Mülleri, (Archiv. fur Naturgeschichte, 1855, p. 43,) and (Monatsberichte zu Berliner Acadamie, 1854, p. 614.)

Few countries probably present a more interesting field to the Herpetologist than Africa, whether we regard the variety or the remarkable character of the forms, and we hope, through the efforts of M. DuChaillu, who is travelling in the Gaboon, with a view to discover if possible the source of the Congo or river Zaire, and of Dr. Ford, who is stationed at the mouth of the Gaboon, that we shall be enabled to develope more fully the Herpetology of that region.

We have prepared the following list of the species inhabiting Liberia and the Gaboon *so far as known*, and refer to the splendid work of Dr. Smith for those found at the Cape. Those common to the two regions are printed in italics:—

Liberia.

Cinixis denticulata, (erosa B.)
Trionyx Mortoni, H.
Agama colonorum D.

Oxybelis Kirtlandii, H.
Dinophis Hammondii, H.
(Dendraspis Jamesoni, A. D)

Euprepes Harlani, H.
Euprepes Blandingii, H.
Python bivittatus, S. (P. Sebæ, D. & B.)
Onychocephalus Liberiensis, H.
Onychocephalus nigro-lineatus, H.
Leptophis smaragdinus, D. & B.
Toxicodryas Blandingii, H.
Causus rhombeatus, W.
Echidna Gabonica, D. & B.
Rana Bibronii, H.
Ixalus concolor, H.
Bufo maculatus, H.

Gaboon.

Cryptopodus Aubryi, A. D.
Trionyx Ægytiacus. G.
Cinixis denticulata, H.
Cinixis Homeana, B.
Hemidactylus angulatus, H.
Chamæleo gracilis, H.
Chamæleo dilepis, L.
Varanus niloticus, D. & B.
Tachydromus Fordii, H.
Euprepes albilabris, H.
Euprepes striata, H.
Euprepes Blandingii, H.
Sphenorhina elegans, H.
Gerrhosaurus nigro-lineatus, H.
Phractogonus galeatus, H.
Leptophis smaragdinus, D. & B.
Chlorophis heterodermus, H.
Boœdon quadrivittatum, H.
Boœdon quadrivirgatum, H.
Hormonotus audax, H.
Lycophidion laterale, H.
Oxybelis Kirtlandii, H.
Toxicodryas Blandingii, H.
Dinophis angusticeps, A. D.
Echis squamigera, H.
Naia Haje, (var. melanoleuca, H.)
Echidna nasicornis, M.
Echidna Gabonica, D. & B.
Atractaspis corpulentus, H.
Triglophodon fuscum, D. & B.
Cæcilia rostrata, C.
Rana subsigillata, A. D.
Lymnodytes albilabris, A. D.
Hyla Aubryi, A. D.
Heteroglossa Africana, H.
Dactylethra Mülleri, P.

Nothing is more striking in the study of the various reptilian forms above described than the simplicity of the elements out of which so great a variety of essential characters are deduced, constituting generic types, permanent in their nature, and linked from the beginning with circumstances of physical geography not yet fully made out, but which a more thorough and accurate analysis may enable us to discover. It is probable that a careful and precise investigation of the genera now determined, even by the most eminent Herpetologists, taking into consideration not one or several sets of characters but the entire animal viewed in regard, not only to its anatomy, which is of equal importance, but also its geographical position, and so to speak, its physiology, will of necessity cause many of them to be separated, constituting either distinct generic forms, or sub-generic types, associated naturally with the physical characters of the soil and climate in which they live; and hence it is of the utmost importance that those animals not liable to changes of domicile as is the case with birds, and even the mammals, should be collected from all known regions of the globe, their habitat being ascertained with the greatest precision, and their anatomy studied with care, so that we may be enabled to deduce the laws which govern their existence, and determine their characters, which cannot be done for a long time to come, and until the facilities for the prosecution of such pursuits are much greater than exist at the present time, but which we have no doubt will ultimately be accomplished. Natural History, physical geography and physiology are so intimately connected, that no real progress can be made without their combined study; and in this manner instead of the artificial and disjointed aspect which the first of these has often been made to present, we shall have a system based upon nature itself, the only true and real foundation of all progress whether in science or morals, or in the solution of those perplexed problems which at present so much and so fruitlessly disturb the public mind. Inquiries of this kind, so far from promoting a spirit of irreverence, induce the contrary, leading man not only in the letter, but better in the spirit, and in the real constitution of things, to search out the laws which determine his well being, and give rise in him to the most profound sentiments of humility and worship of the great Creator, whose intelligence and power at every step excite his wonder and admiration.

The death of Dr. E. K. Kane, U. S. N., late a member of the Academy, was then announced; whereupon the following resolutions, offered by Mr. Cassin, were unanimously adopted:—

Resolved, That the Academy has heard of the decease of its distinguished member ELISHA KENT KANE, M. D., of the United States Navy, with deep sorrow, and regards it as a loss to the cause of science, and to the country.

Resolved, That the great abilities and enterprise of Dr. Kane entitle him to the highest rank among scientific voyagers and explorers, and that his many and valuable contributions to the collections of the Academy, and his constant interest in it, entitle him to special regard.

Resolved, That this Academy will attend the funeral of Dr. Kane, and that a special meeting be called for that purpose.

Resolved, That a copy of these Resolutions be transmitted to the family of Dr. Kane, and that the same be published.

March 3d.

Vice President BRIDGES in the Chair.

Dr. Uhler stated:

That on the night of the 10th inst., about 11½ o'clock, he was startled in his residence at Manayunk, by a heavy rumbling noise, and shaking of the house and furniture, and rattling of the windows; the sound resembled that of a heavy wagon drawn over hard frozen ground. In the course of four or five seconds, the noise and trembling were repeated. Dr. U. raised the window immediately, but found everything perfectly quiet; there was no wind, and he attributed the noise to an earthquake.

The sound appeared to come from the north east, and then returned; the whole duration was probably twenty seconds. He had no means of determining the amount or direction of the oscillation.

March 10th.

Vice President BRIDGES in the Chair.

Communications were presented for publication in the Proceedings, entitled:

Contributions to the Neuropterology of the United States, No. 1, by Philip R. Uhler.

Descriptions of twelve new species of Naïades, by Isaac Lea.

And the following for publication in the Journal:

On the Caducibranchiate Urodele Batrachians, by Edward Hallowell, M. D.

On Trigonophrys rugiceps, by Edward Hallowell, M. D.

Which were respectively referred to Committees.

Dr. LeConte announced the decease of Prof. J. W. BAILEY, of West Point, a correspondent of the Academy.

On motion, a Committee was appointed, consisting of Messrs. Vaux, LeConte, and Foulke, to make arrangements relative to attendance at the funeral of Dr. E. K. Kane, on the 12th inst.